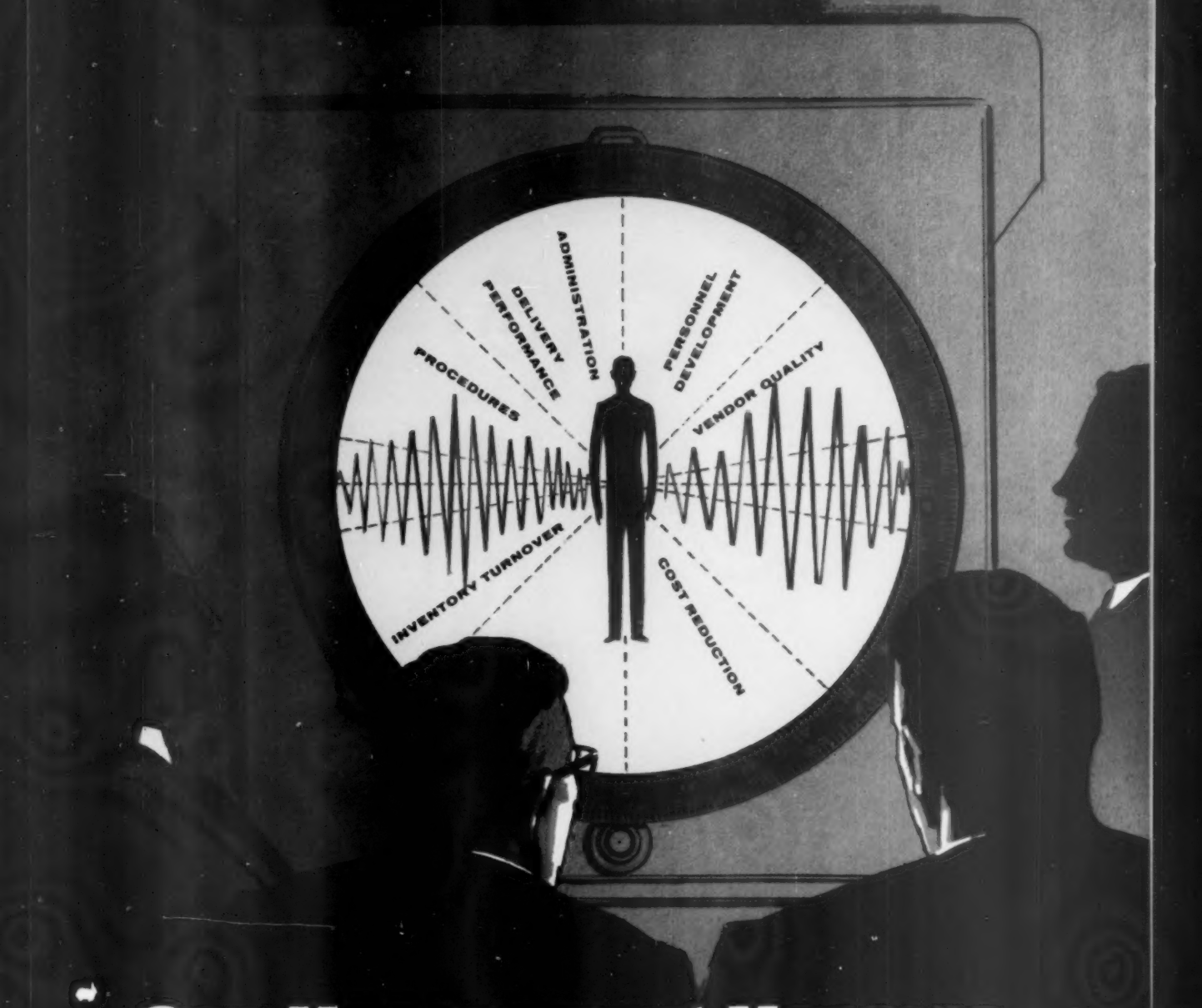
October 27, 1958

PURCHASING

The Methods and News Magazine for Industrial Buyers



Can Management Measure Purchasing Performance?

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A Conover-Mast Publication SEVENTY-FIVE CENTS

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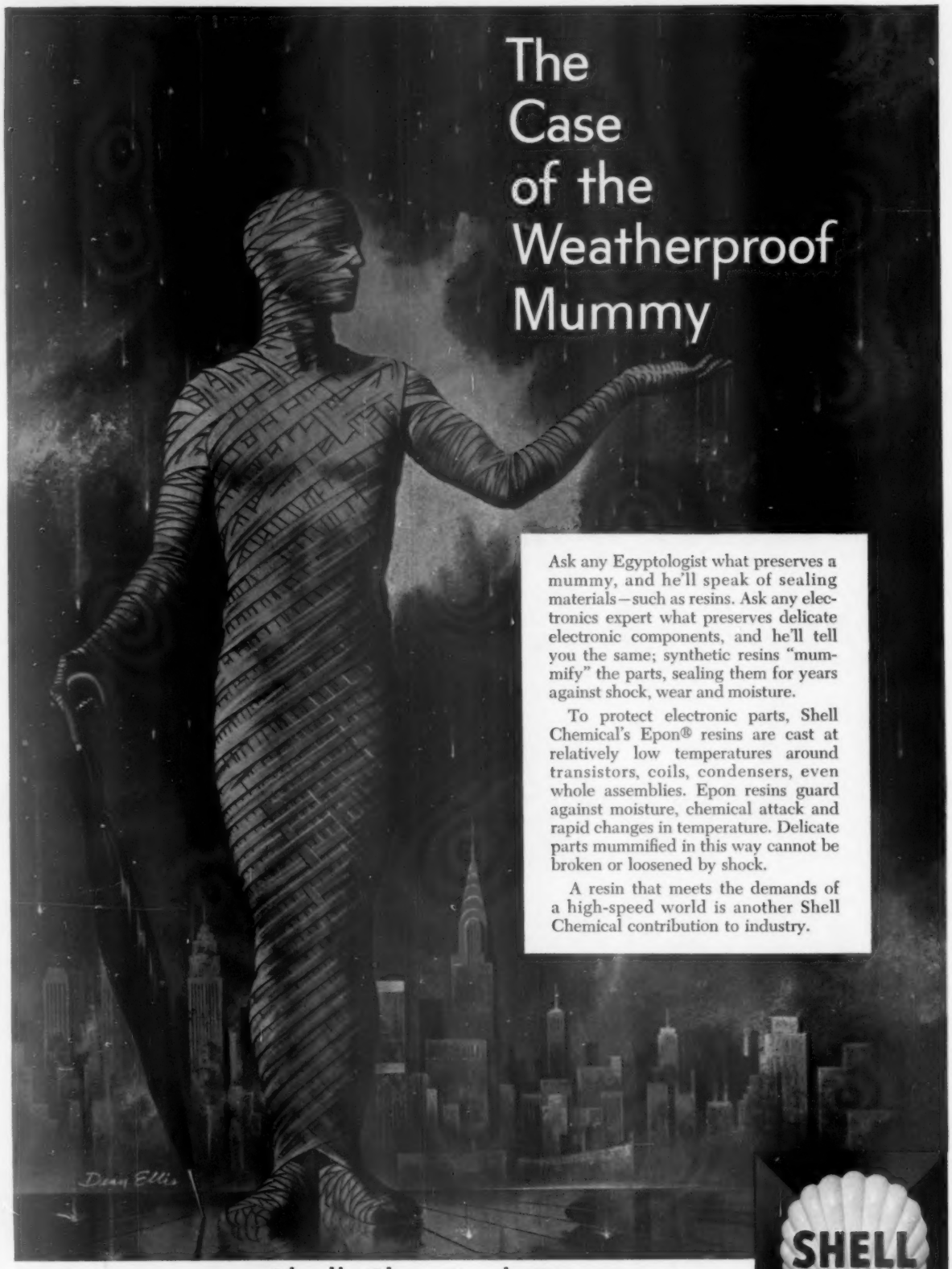
The Case of the Weatherproof Mummy
Ask any Egyptologist what preserves a mummy, and he'll speak of sealing materials—such as resins. Ask any electronics expert what preserves delicate electronic components, and he'll tell you the same; synthetic resins "mummify" the parts, sealing them for years against shock, wear and moisture.
To protect electronic parts, Shell Chemical's Epon® resins are cast at relatively low temperatures around transistors, coils, condensers, even whole assemblies. Epon resins guard against moisture, chemical attack and rapid changes in temperature. Delicate parts mummified in this way cannot be broken or loosened by shock.
A resin that meets the demands of a high-speed world is another Shell Chemical contribution to industry.
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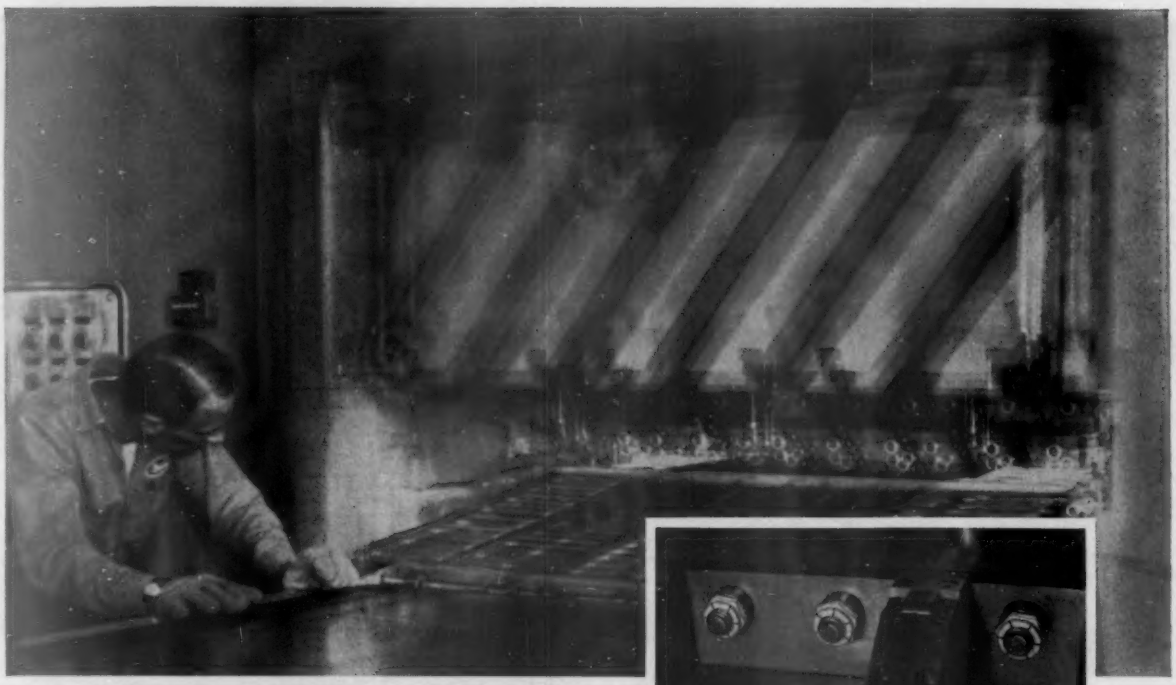

200-ton flying press, so called because of its unique rotary die action, fabricates coil steel on-the-fly, with dies and strip in continuous motion. Inset shows FLEXLOC self-locking nuts used in fastening die assembly. For maximum clearance, thin-type FLEXLOCS were selected for this particular application. Despite constant pounding and vibration, they never require retightening.

FLEXLOC self-locking nuts help you cut costs of vibration-proof fastening

FLEXLOC self-locking nuts lock and stay locked wherever wrenching stops. Neither impact, shock nor vibration will work them loose. They help give your products greater reliability, a quality which industry and the public are demanding as never before.

You can specify FLEXLOCS in either regular height or thin height (for applications where space and weight savings are primary considerations). Both are 1-piece, self-locking units requiring no separate locking devices—no lockwashers, jam nuts or cotter pins. There is nothing to put together, come apart or get lost. And there are no nonmetallic inserts to weaken the structure of the nut. With a FLEXLOC, every thread, including those in the locking section, carries its full share of the tensile load.

Because they require no auxiliary locking elements, FLEXLOC self-locking nuts facilitate design and specification; simplify purchasing, inventory and handling; reduce assembly time and costs. They also save on maintenance by eliminating the nuisance of retightening nuts that have vibrated loose. Yet FLEXLOCS are readily removed when necessary and can be reused many times without loss of locking power.

See your authorized SPS distributor for complete details. He carries FLEXLOC self-locking nuts—regular and thin height—in a full range of standard sizes, materials and finishes. Flexloc Locknut Division, STANDARD PRESSED STEEL CO., Jenkintown 31, Pa.

HIGH RELIABILITY

SPS research is continually developing fasteners with higher and higher standards of predictable performance. By installing SPS high-reliability fasteners in your assemblies, you increase your overall product reliability.

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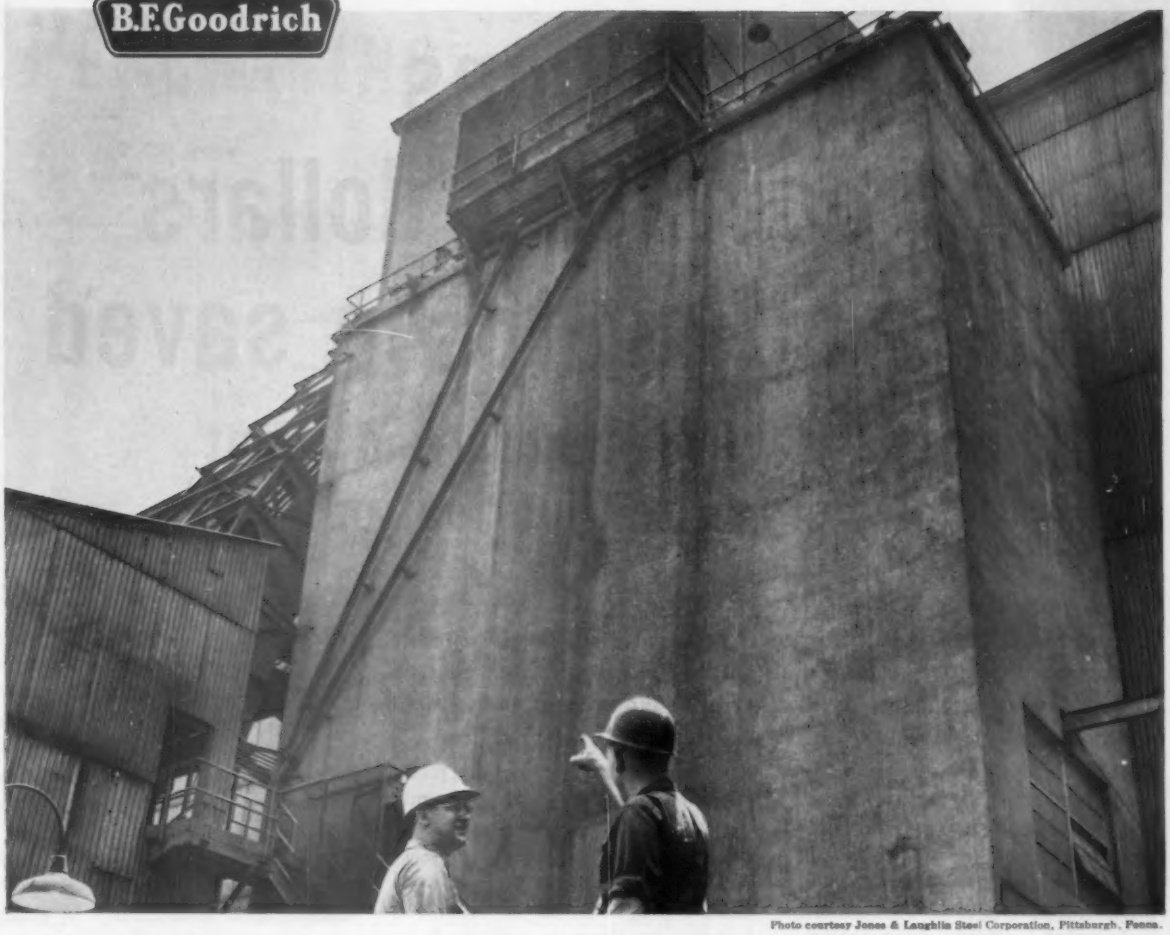

Photo courtesy Jones & Laughlin Steel Corporation, Pittsburgh, Penna.

Good riddance to bad rubbish —through hose

B.F.Goodrich improvements in rubber brought extra savings

Problem: At this power plant they have to get rid of huge loads of a waste material, called fly ash, every day. It's collected from furnaces, washed, then piped down the side of that building and away to a disposal pit so as not to polute the air or a near-by river. Fine, except that this mixture of gritty fly ash, corrosive acid water, sharp slivers of metal was eating holes through the metal pipe in only six months. Each pipe replacement cost $700 plus about 100 hours of workers' time.

What was done: Company engineers, working with a B.F.Goodrich distributor, decided to replace the pipe with rubber hose specially developed by B.F.Goodrich to handle rough materials. The lining of this hose is made with the toughest, wear-resisting rubber known. The hose is so rugged that it's even used in some places to handle broken glass, chunks of coal, granite chips.

Savings: The B.F.Goodrich hose had been on the job 8 years when the picture was taken. It gulps thousands of gallons of acid water and grit every day, but shows no sign of wear, looks good for many years more.

By lasting 7½ years longer than pipe, plant engineers figure that the B.F.Goodrich hose has already saved $6400 in replacement costs and $4800 worth of maintenance time.

Where to buy: Your B.F.Goodrich distributor has exact specifications for the B.F.Goodrich hose described here. And, as a factory-trained specialist in rubber products, he can answer your questions about *all* the rubber products B.F.Goodrich makes for industry. *B.F.Goodrich Industrial Products Company, Dept. M-436, Akron 18, Ohio.*

B.F.Goodrich *industrial rubber products*

For More Information Write No. 156 on Inquiry Card—Page 32

Millions of operating dollars are waiting to be saved

(by plant managers who adopt organized lubrication)

Concept of Organized Lubrication to save cash in 5 areas of plant operation is proving to be a most fertile field for plant-wide cost control. Two reports now available from Texaco on opportunities, methods, case histories.

"Millions of dollars have already been saved in the operating costs of plants where management has recognized the importance of lubrication and has organized planned lubrication programs. Millions of dollars are waiting to be saved in plants where management has not yet become aware of the benefits of organized lubrication."

The entire July, 1958, issue of *Lubrication* magazine is devoted to "Organized Plant Lubrication." The statement above summarizes the issue's findings.

In effect, this and other writings on the subject reflect the fact that here is a relatively new and certainly fertile field for real cost savings in plant operations.

There's enough evidence in to cause excitement among the experts. Among the experts are the men who are putting Organized Lubrication to work—the plant managers and their team of engineers.

For, in assuming the large burden of satisfying the corporate measure of profit and loss on their units, plant managers have been quick to adopt new concepts and practices that result in plant-wide savings, such as planned overhaul, professionalized purchasing and organized quality control.

Most of these have been cost-controlling programs. So is Organized Lubrication. From the evidence in so far, this can prove to be one of the most fertile of the new plant managing practices.

Why? *Because Organized Lubrication can create cash savings in five ways; in inventory, production, downtime, maintenance and equipment life. Once adopted as plant practice, Organized Lubrication is placed in harness by plant engineers, production superintendents, maintenance superintendents, and purchasing agents.*

Let's acknowledge now that lubricants alone, no matter how excellent, are not the secret; rather, it is the setting of goals, the organizing of methods, and the expertness of men who can combine a knowledge of this new opportunity with an understanding of plant practices and lubrication.

In plants throughout the country Texaco's planning book has been studied and put to use. Some large corporations have adopted its recommendations on a staff level, or have set up committees to study the subject. Many plant units report savings from 10 to 100 times the cost of the lubricant used!

If you are a member of a plant operating group, or if you are concerned with cost control in many plants, you will find this subject well worth an introductory 10 minutes or so.

SEND FOR TEXACO'S NEW GUIDE FOR ORGANIZING LUBRICATION

Limited quantity available; please attach coupon to your company letterhead

TEXACO

The Texas Company
Dept. P62
135 East 42nd St.
New York 17, N. Y.

Please send me Management Practices that Control Costs via Organized Lubrication.

☐ I would also like the July issue of *Lubrication* Magazine (published by Texaco).

Name_____ Title_____

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PURCHASING

The Methods and News Magazine For Industrial Buyers

OCTOBER 27, 1958
VOLUME 45, No. 9

B. P. MAST, *Chairman of the Board*
B. P. MAST, JR., *President*
RAY RICHARDS, *Publisher*

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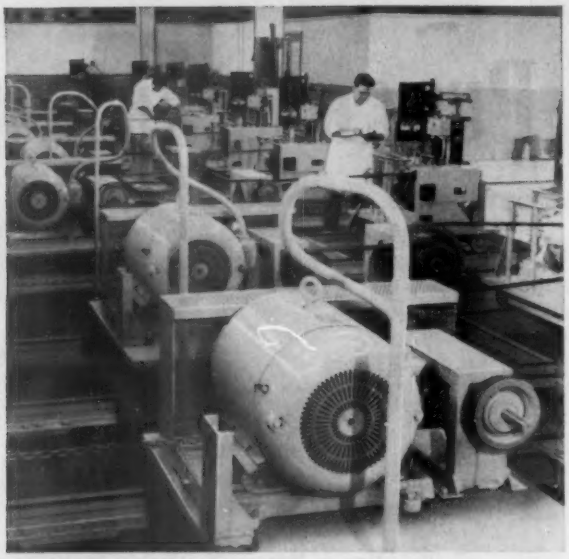
Why V-Belts with the Green Seal meet every test



Nearly one-third of all electric power used at the Goodyear V-Belt plant goes into testing, checking and development operations. These giant dynamometers, for example, test larger belts in all speed ranges and with various pulley diameters—with belt loads from zero to 100 h.p. The effects of reverse bending, various placements of idlers and high or low tension are also checked.

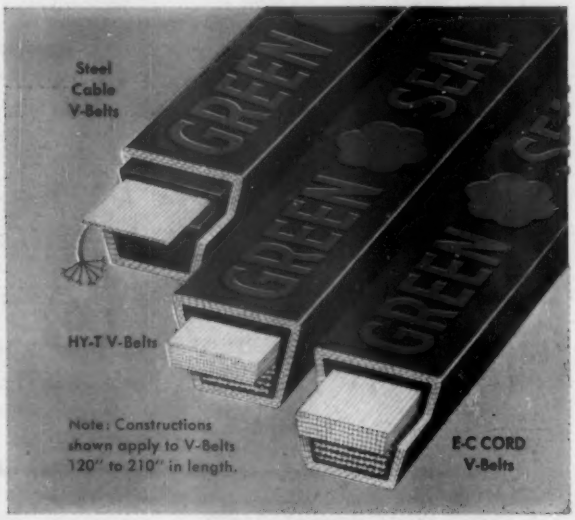
Dimensional stability! Belts are even test-run in closed, high-temperature ovens—to verify that their 3-T (Triple-Tempered) construction remains dimensionally stable under extreme operating conditions.

Perfectly matched sets! Belts are carefully measured on ultra-precision machines – then carefully coded to guard against "loafers"—or belts that overwork.

High strength, low stretch! Belts are subjected to "breaking point" tensile-strength tests in the Goodyear laboratories – to insure long, trouble-free service on your drives.

Maximum resistance to shock-loads! Belts are "tortured" on special machines that simulate the severest service—your protection against early belt failure.

Clean, smooth-running operation! Special nondusting rubber cover compounds are continually tested for friction balance—to give you freedom from sticking or grabbing in the grooves.



To pay off in—

Maximum trouble-free horsepower hours at minimum cost. That makes it a real gamble to settle for anything less than V-Belts with the Green Seal. See your Goodyear Distributor – or write Goodyear, Industrial Products Division, Lincoln 2, Nebraska, or Akron 16, Ohio.

DIMENSIONALLY STABLE V-BELTS with the GREEN SEAL by

GOODYEAR

60 YEARS

THE GREATEST NAME IN RUBBER

Green Seal, E-C Cord, Hy-T —T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

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Straws in the Trade Wind

► **LOWER RAIL RATES**—Don't be surprised to find more sales representatives from the railroads in your office soon with proposals to cut your freight bill considerably—if you agree to ship a substantial proportion of your goods with a particular carrier. So far the I.C.C. hasn't approved the plan (a variation of a method used successfully in Canada and England) and there'll probably be lots of opposition from the truckers. But if it goes through, purchasing agents will be able to knock a big chunk off their present freight bills.

► **MANAGING INVENTORIES**—Who manages inventories in your company? Is it the P.A. or someone else at the plant or divisional level? Or does your director of purchases or some other staff head at corporate headquarters handle it? An analysis of the successes and failures of both the plant and corporate methods appears in the National Industrial Conference Board's new publication "Inventory Management in Industry". It's a good guide in helping determine where the control of stocks belongs in your company.

► **BUY YOUR OWN TRANSPORTATION**—Purchasing departments that are backed up with red hot traffic departments are tending more and more to specify FOB Origin rather than FOB Destination on their purchase orders. The reason: it's felt that the buyer's traffic department is likely to swing a better transportation deal. Also: it gives the buying company greater control. Latest to make this change is one of the "Big Three" auto companies which recently renegotiated all of its purchase contracts on an FOB Origin basis.

(TURN PAGE)

For the P.A.'s Hot File . . .

A new, and for P.A's unhappy, trend that seems to be developing is a drift away from standardization. Some suppliers are playing up the non-standard features of their products as a sales gimmick. There are reports of manufacturers' using new materials—not for any utilitarian purpose—but mainly so that they can claim that they have the "latest" or the "newest." Another consideration: use of non-standard materials or parts makes it more difficult for a P.A. to classify and evaluate a product.

New orders for industrial supplies and machinery rose 1.2% in the latest report issued by the American Supply & Machinery Manufacturers' Association. The index now stands at 172 (July 1948=100), 20 points higher than May 1958 when the upturn started. However, it is still 49 points below its all-time high of 221 in January 1957.

FACTS

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TREMENDOUS IMPORTANCE!

New Departure has many years of experience in the manufacture of ball bearings to the finest ultra-precision tolerances. And . . . New Departure uses the most advanced equipment for research, development and production in making a full range of bearings of precision instrument classification. A new catalog, including miniature sizes, plus additional information helpful to you in design problems sent on request. Write New Departure, Division of General Motors, Bristol, Conn.

ASK FOR CATALOG P.I.B.

FULL SIZE	BORE B		DIAMETER D		WIDTH W		BALLS		CORNER RADIUS r (To Clear)
	FRACTION	DECIMAL	FRACTION	DECIMAL	FRACTION	DECIMAL	NO.	DIAMETER	
	3/64	.0469	5/32	.1562	1/16	.0625	5	1/32	.005
		.0550	3/16	.1875	5/64	.0781	6	1 mm	.005
	5/64					.0937	5	1/16	.006
	3/32					625	8	.025	005
	3/32						6	1/16	
	1/8							1 m	
	1/8								
	5/32	.15							
	3/16	.1875							.005
	3/16	.1875	3/8					mm	.006
	1/4	.2500	3/8	.3750					.006
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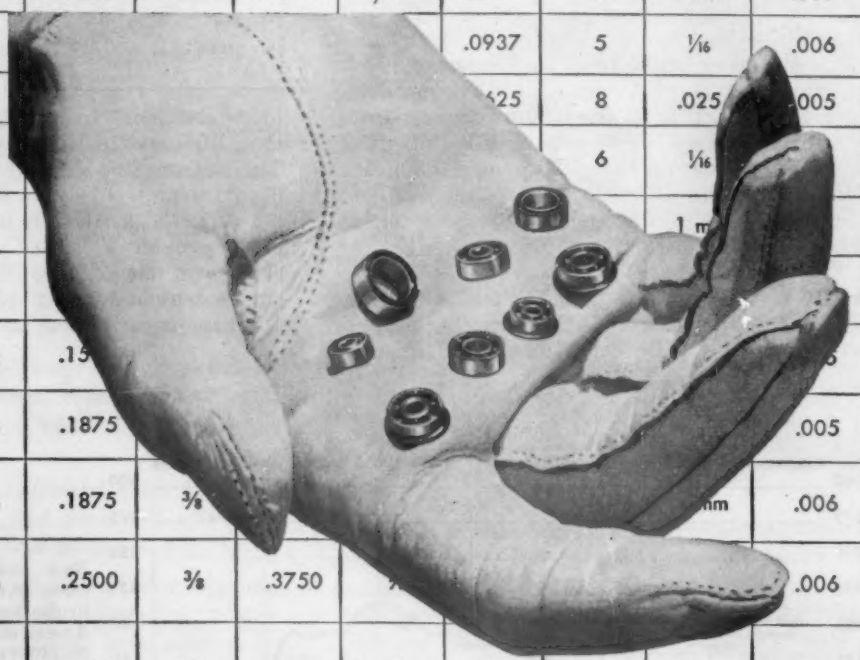

GM FORWARD FROM FIFTY

NEW DEPARTURE

DIVISION OF GENERAL MOTORS, BRISTOL, CONN.

NOTHING ROLLS LIKE A BALL

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Straws in the Trade Wind

► **BUYING CONTAINERS?**—If so, you may be able to save money on your transportation bills. At least one freight forwarder on the Eastern seaboard has announced lower rates for LCL shipments of insulated containers to certain areas of the country.

► **STRONGER STRUCTURAL STRIP**—A 30 inch width of a new galvanized strip steel—said to be 97% stiffer than conventional 28 inch wide strip—is now on the market. Highly corrosion-resistant and long-wearing, it's being used by P.A.'s for roofing and siding, ceilings, and storage liners. The strip is corrugated for rigidity and has a mastic material to provide a leakproof seal.

► **SELLING TO THE GOVERNMENT?**—You're going to have to accept full responsibility for quality control if your company manufactures items for military use. Under a new federal policy governing acceptance of supplies, the government's role will be to verify the contractor's testing data. But the onus for insuring top quality is definitely on the manufacturer.

► **MORE MEDIOCRICY**—A "dangerous drift" towards mediocrity as a normal work standard is affecting our capacity to produce quality goods. So says Benjamin F. Fairless, president of the American Iron and Steel Institute. Unless we encourage better-than-average individual performances by everyone, he warns, we'll be marching backwards instead of forwards in the matter of stimulating quality performance from all our employees.

► **STILL MORE PRICE CUTS** — You're probably still getting mail these days from suppliers who are lowering their prices. Have you noticed these?: McGraw-Edison Co. cut transformer prices between 10% and 15%; DuPont reduced the price of titanium metal sponge around 20¢ a pound; heavy duty packaging material was reduced 8% by Goodyear; and Dow Chemical Company dropped the price of a latex for paint by two cents a pound.

► **UNIONIZING P.A.'S**—Keep your eye peeled for intensified action by labor organizers to form a union of buyers and purchasing agents. Rumblings of efforts along this line are being heard along the East Coast, especially Connecticut and Pennsylvania. This would not be a move to get purchasing people in a general labor organization for salaried employees, as has been the case in the past. Instead, a union for those in the purchasing department is being pushed.

Tom Campbell

QUOTE!

Predicting a marked tightening of the steel market, Tom Campbell, editor-in-chief of "The Iron Age," warns steel buyers that "those who feel they have all the steel they need—and can get more any time they want it—may be quite disappointed later this year. While we will have no steel shortages such as we had a few years ago, the hand-to-mouth buying policies of some users will put them in a bad way competitively."

Mr. Campbell believes there is "more than a 65-35 chance of a long and bitter steel strike" next year and advises steel users that now is the time to buy. "Within the next few weeks deliveries . . . will become extended to the point where you will have to go out of your regular buying area if you want steel quickly—and even then you will not find the kind of delivery you want."

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29081—One-piece-woven 18-oz. double palm

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13011—8-oz. Canton flannel

28571A—18-oz. quilted double palm

95651—Leather palm, waterproof safety cuff

99652—Special tanned, green leather palm

43121—Large size Hot Mill

33011—Reversible, 8-oz. canton flannel

28071—18-oz. quilted double palm

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21401A—22-oz., nap in, double palm

64-72051—Leather palm, red Mighty-Dot* back

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New York
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Oklahoma City
Portland, Ore.

For More Information Write No. 160 on Inquiry Card—Page 32

Special Industry Report:

A long history of price fluctuations, lost markets and periodic oversupply has plagued the copper industry in past years. Here's a report on the red metal's future.

UNLIKE SOME other basic metals, copper—which is traded on a world commodity basis—is subject to extreme price fluctuations. Many copper buyers, frustrated by the sight of a price cycling from abnormal lows to abnormal highs (virtually a 2 to 1 range in the last two years or so), have thrown up their hands and gone out to find substitutes.

Some people might automatically think that fluctuating prices give the market-wise P.A. the opportunity to "buy right" and to save his company money. But recent surveys have shown that the extremes in copper prices are of primary concern to a substantial number of buyers. Many have indicated the desire for stable prices —even if they were to be higher than present levels.

Increasingly severe competition from foreign fabricators, whose labor costs are much lower has had a marked effect on the domestic price of copper. Some brass tubular products from foreign fabricators have been offered at as much as 45% below domestic prices. According to one industry source, "the percentage of brass mills' business taken over by foreign competition has increased from one-half of 1 per cent in 1952 to 6 per cent in 1957. And the 6 per cent represents the most desirable and profitable part of the business".

The Copper and Brass Research Association has estimated that the existing import-export situation has transformed our 25,000 ton average annual exports of brass mill products to net imports of about 45,000 tons in 1957. This represents an overall loss of around 70,000 tons, or a year's output by more than 2000 brass mill workers.

World Production

World production of copper has continued to assure a plentiful long-term supply. In fact, during 1957, world production exceeded world consumption (see chart). Announced reductions in total 1958 world production has brought the available supply more realistically in proportion to the demand.

A constantly increasing standard of living in Europe has affected the consumption picture. A look at the free world copper statistics shows some very significant facts. For example, the increase in European use of copper during the period of 1955 to 1957 was 21.4%. But significantly, about three-quarters of that increase took place in 1956 and 1957.

While European consumption increased considerably in 1957, price declines on the London Metal Exchange were drastic. Domestically, however, during the same year copper prices were reflecting the normal operation of the law of supply and demand. Following a decline in domestic consumption from 1,454,000 tons to 1,370,000 tons, the price of copper in the United States went down from 36 cents a pound to 25 cents a pound.

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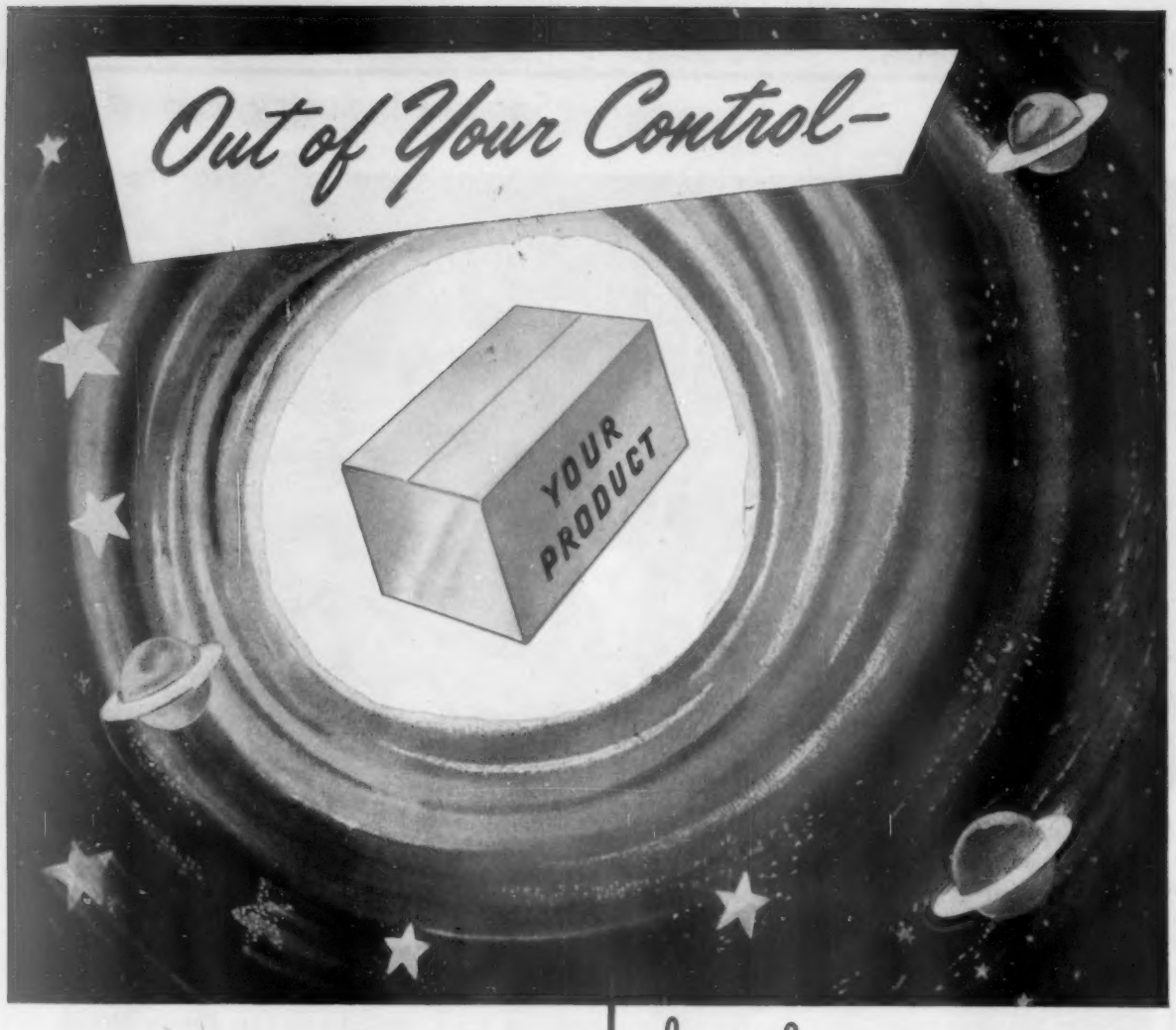

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For More Information Write No. 161 on Inquiry Card—Page 32

Special Industry Report:

Now, however, copper seems to be firming. Labor unrest is definitely one of the reasons for the change. Recent strikes in Northern Rhodesia, Canada and New Mexico tied up approximately 20% of world copper production.

Adding to copper's new strength is the general increase in industrial production in the U. S. Also, many companies have had to increase their orders to replenish inventories.

Offsetting this picture of increased demand and reduced production, however, is the amount of unsold metal still in the hands of refiners. The latest report from the Copper Institute shows that there are still 436,532 tons of refined copper available. This is considerably below the figure of more than 500,000 tons of refined copper that was unsold in April, but the total is more than enough to prevent a real copper scarcity from developing in the near future.

So far as brass mill products are concerned, here, too, there are signs of improvement. Imports—mainly of tube and tubing—continued to bother U. S. mills earlier this year. However, a few months ago the import tariff was boosted 1.7¢ per pound of copper content. The higher tariff along with the rising trend of foreign primary prices means that foreign mills will be getting a smaller share of the U. S. market.

For P.A.'s the outlook on mill products is this: firmer prices and a reduction in volume discounts.

Copper's Problem

Ironically, one of the major problems facing the copper industry is that historically it has had acceptance as the best conductor of heat and electricity. This, in effect, served to limit its use primarily to these two applications.

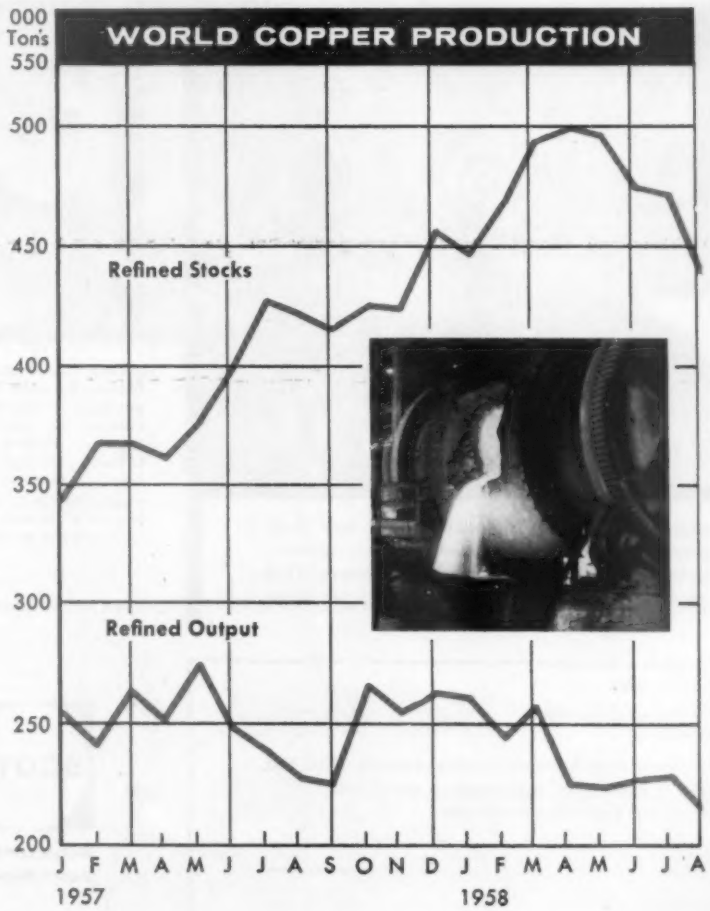
For many years, this did not bother the copper industry. A great many producers believed that the metal really sold itself. There was a tendency to sit back and rely on the market to continue as it always had been, despite copper's fluctuating price structure.

But new materials began to encroach on copper's traditional position. These new metals, relatively cheap and easy to produce, found increasing acceptance by purchasing agents.

The copper industry was jolted by the realization that the red metal cannot sell itself on its reputation alone. So copper producers are now undergoing a major change in attitude. Emphasis on marketing is replacing emphasis on "hard rock" mining. New industry and company promotion efforts are being planned with the stress on new product development.

New applications leading to larger civilian and military markets are fast appearing. Heat absorption in missiles is right up copper's alley. Elimination of hot boxes on freight car axles is now possible with new bronze bearings. Expanding applications for printed circuits in electronics are almost endless.

Coppermen are heeding the warning by purchasing executives to increase their efforts in research if they want to keep pace with competitive metals. And if the industry can do something about stabilizing its prices, copper will regain many of its old markets and add new ones at the same time.



Send for this Free Booklet!

...shows how to design efficient modern washrooms with the help of **Scott's Washroom Advisory Service**

Scott's Washroom Advisory Service is based on experience gained in serving nearly a million washrooms. It incorporates tested and proved principles to follow when planning new washrooms or remodeling present facilities. There's no charge or obligation for this service.

To learn more, send for free booklet. Or, for "quick change" ideas to modernize and increase efficiency of existing facilities, ask to see Scott's 14-minute film "The Day That Dooley Found Peace." Mail coupon today.

"Customer and employee satisfaction can best be guaranteed by a completely streamlined operation," says William E. Engel, store manager of the new $2½ million Harris department store at Riverside, California. "And streamlining," he continues, "includes efficient washrooms that impress customers and employees with their cheerful appearance and modern convenience." To help plan the washrooms, Harris called on the special Washroom Advisory Service offered by Scott Paper Company.

Store superintendent James T. Kennedy shows how Scott paper towels are dispensed from the stainless steel, recessed dispenser-receptacle installed near the washbowls. This modern Scott dispenser is easy to maintain, helps eliminate floor litter.

Off-the-floor washbowls and other fixtures for ease in mopping, individual liquid soap dispensers, large mirrors, tile floor and tile wainscotting, modern lighting, scientifically-planned traffic flow are included in Scott Washroom Advisory Service principles contributing to efficiency and low-cost maintenance at Harris.

In women's washrooms at Harris, Scott recommended mirrors be placed on the wall opposite the washbowls. This reduces loitering at the lavatories to apply makeup and comb hair, and also avoids the problem of hair-plugged drains.

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Department P-810
Chester, Pennsylvania

- ☐ Please have a Washroom Advisory Service representative call.
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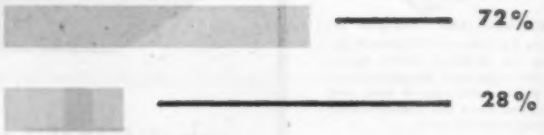
2944 East Venango Street, Philadelphia 34, Pa.

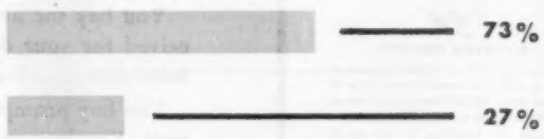
How Does Management Measure Purchasing Performance?

"If purchasing were a simple clerical function, it would be easy to measure its performance with cut-and-dried rules. Fortunately, it isn't that simple; good purchasing involves judgment and decision-making, neither of which can be measured." That's one P. A.'s view of the problem of measuring purchasing performance. But almost every P. A. is interested in measuring performance. If there were objective tools to do it; purchasing's prestige would be greatly enhanced since management would be more aware of the many benefits of good purchasing. The purpose of this opinion poll was to find out not only how management *is* measuring purchasing performance but how it *should be* measuring it.

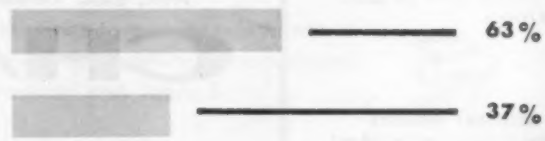
1. Do you think that top management's inability to measure purchasing performance has hindered recognition of the purchasing function?



2. If it were possible to develop objective measures of purchasing performance, do you think management could be persuaded to make them the basis of adjustments in compensation for buyers and purchasing agents?



3. Does your own management make any effort to measure the performance of its purchasing department?



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GENERAL CHAINS

Cast chains including detachable, pintle, case conveyor, mill, transfer, log-haul, combination-Durobar, cast roller, ley bushed, and drag. Steel chains including detachable, Chabelco, drop forged, block and bar, long-pitch leaf, and TableTop.

ROLLER CHAINS

Complete line of roller chains, including A S A single and multiple strand, A S A double pitch, agricultural, replacement, and PlateTop; block and leaf chains; STOCK and special types.

CAST SPROCKETS

Including STOCK and order sizes, arm-body and plate-body, solid and split, flanged rim and drum flanged, traction wheels and idlers. Made of gray cast iron, Temperim or cast steel.

CUT SPROCKETS

Including single and multiple strand, with and without hubs, in STOCK sizes of Shaft-Ready, Taper-Lock, and stock-bore types for roller chain; also made-to-order sizes. Made of steel or semi-steel, depending on type.

BEARINGS AND TAKE-UPS

Including the Shafer Self-Aligning Roller Bearing line of pillow blocks, flange units, cartridge units, flange-cartridge units, duplex units, take-up units, and take-up and frame units. Also babbitted and bronze-bushed types.

TRANSMISSION

Including roller chain flexible couplings, square-jaw and spiral-jaw clutches, solid and split set collars of malleable iron or steel, chain slack adjusters, and lubricating fittings.

ELEVATOR BUCKETS

Cast types made of malleable iron or Z-metal, and fabricated types made of welded steel. STOCK and order types. From the smallest to the largest commercial sizes for handling all classes of bulk materials.

CONVEYOR PRODUCTS

Complete line of belt conveyor idlers—regular and training, in troughing, flat, and return types; welded steel pulleys; belt conveyor trippers and take-ups; belt cleaners; backstops; steel beaded slats; leakproof aprons and self-contained feeders.

ACCESSORY PRODUCTS

Bin gates of undercut type or rack and pinion type—plain and dust-tight Spray nozzles in a complete range of sizes and materials. Chain vises and cases.

what PLUS values

DO YOU BUY FROM THIS CATALOG?

What do you buy from CHAIN Belt in addition to the products listed in the new Standard Merchandise Catalog 610?

You buy the assurance of a quality product—of value received for your dollar. You buy fast shipment of standard items from distributor and warehouse stocks across the nation.

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Write for your 610 Catalog today—and consider these extra values which CHAIN Belt offers you toward a sound and mutually profitable business relationship. CHAIN Belt Company, 4670 West Greenfield Avenue, Milwaukee 1, Wis. In Canada, write CHAIN Belt (Canada) Ltd., 1181 Sheppard Ave., East, Toronto, Ontario.

CHAIN BELT

Milwaukee 1, Wisconsin

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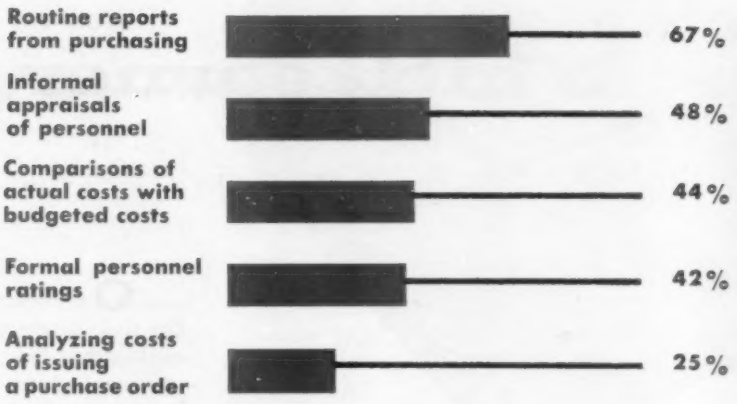
Purchasing Opinion

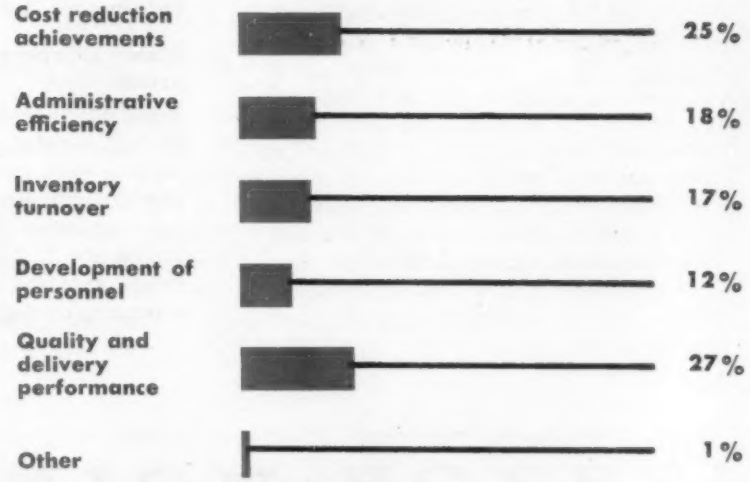
4. If your management does attempt to measure purchasing performance, how does it make its evaluation?



(Other techniques mentioned frequently were number of complaints received by management on quality of service provided by purchasing, cost reduction reports and inventory turnover.)

5. What factors do you think should be taken into account when measuring purchasing performance and how would you rate their relative importance?

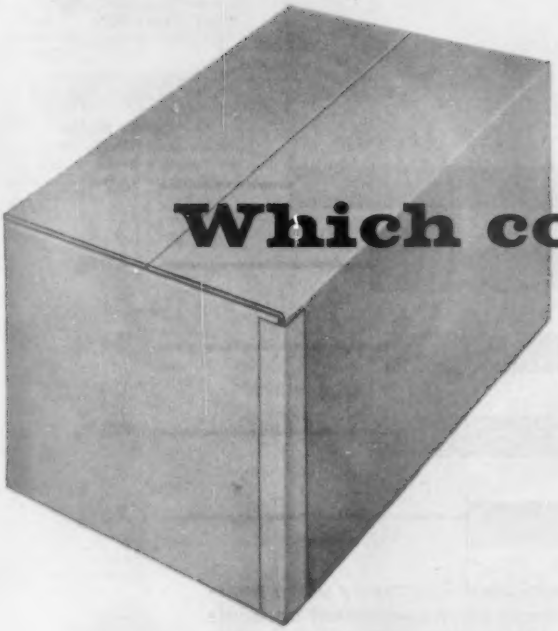
A weighted average of all replies showed that the relative importance of each of the following was:



(Most frequently mentioned were development of good supplier relations and ability to coordinate the flow of new products and ideas.)

• SPECIAL: For information on the latest methods of measuring purchasing performance, don't miss the articles starting on page 59. •

What you should know about "manufacturer's joints" in Union Boxes.



Which corner of a box

One corner is more important than the rest: where your corrugated shipping container is held together. This "hinge", or manufacturer's joint, often holds the key to your box's performance.

As the illustrations show, manufacturer's joints comprise three basic types: taped, stitched, and glued-lap. Each does a special job. Knowing which to use, and when, calls for a detailed analysis of your product and how it will be shipped.

Union Box engineers will be glad to make such a study for you. This is part of Union's complete structural design service. These fundamentals, however, are excellent guides:

Many shippers prefer tape

Taped Joint
(outside)

Tape is generally gum-backed, reinforced kraft paper or cloth, having high tear strength, especially in the lengthwise direction. Tapes are 2, 2½ and 3 inches wide and come in varying grades depending on degree of strength required.

should you examine first?

Advantages: no projections. In stacking, boxes lie flat, rock less. Also, entire interior area of box can be used. The taped joint is continuous, too . . . seals out dust and dirt. And it folds to make a true box corner.

On the other hand, tape is frequently more expensive than other manufacturer's joints. It can be adversely affected by moisture also. In some cases, tape may interfere with printing.

The sturdy stitch

Frequently used for heavy items like canned goods, this joint uses steel staples driven from the outside of the box panel. It is probably the strongest "hinge", gives the most positive closure, and is not affected by moisture or cold. It is usually the least expensive.

Stitched Joint (outside)

The closure, however, is not continuous. And, since the metal stitches may protrude inside the box, this joint is normally not recommended for fragile and prone-to-scratch articles.

The diagonal stitched joint shown is a typical arrangement. Others include vertical, horizontal, and double stitching.

Glued lap . . . the versatile joint

Flap may be adhered either to the inside or outside of the box, and to the end or side panel. Inside-flap gluing is the most popular. It is the only joint which leaves a completely uninterrupted exterior printing surface.

Like the taped joint, the glued lap joint is continuous . . . forms a true fold. Performance under adverse moisture conditions is questionable. Also, inside-lap does not give 100% clear inside-packing area.

Glued Lap Joint (inside)

Take full advantage of Union's accumulated knowledge in constructing and recommending manufacturer's joints for shippers in every industry. Consistently well-engineered features such as these offer the surest protection for your product and your shipping investment.

union camp

Write for Union's free, informative booklet "Manufacturing Corrugated Boxes."

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INTRODUCING

THE GREATEST QUALITY OFFERED ON CORRUGATED

Mead Containers, Inc. guarantees every Mead Bonded Shipping Container meets or exceeds I.C.C.-approved quality standards—and a $500,000 bond backs this up!

MEAD BONDED CONTAINERS

Now, Mead Containers, Inc., unconditionally guarantees the quality of every Mead container—bringing you new packaging safety.

Mead offers you this great, new protection because Mead Bonded Containers consistently equal or excel specification requirements set up under Rule 41, Uniform Freight Classification and Rule 5, National Motor Freight Classification. This means you get the finest materials and strongest construction in every Mead Bonded Container. And you get complete protection against damage resulting from sub-standard packaging.

If a Mead Bonded Container does not meet I.C.C.-approved specifications, Mead will immediately pay the full cost of defective containers or rush replacements to you.

Mead can make this guarantee because quality controls make certain every Mead Container is of consistently high quality. Mead Bonded Containers and services are available in most major marketing areas. For full facts about this great new shipping protection, write or call your nearest Mead office.

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Subsidiary of **THE MEAD CORPORATION**

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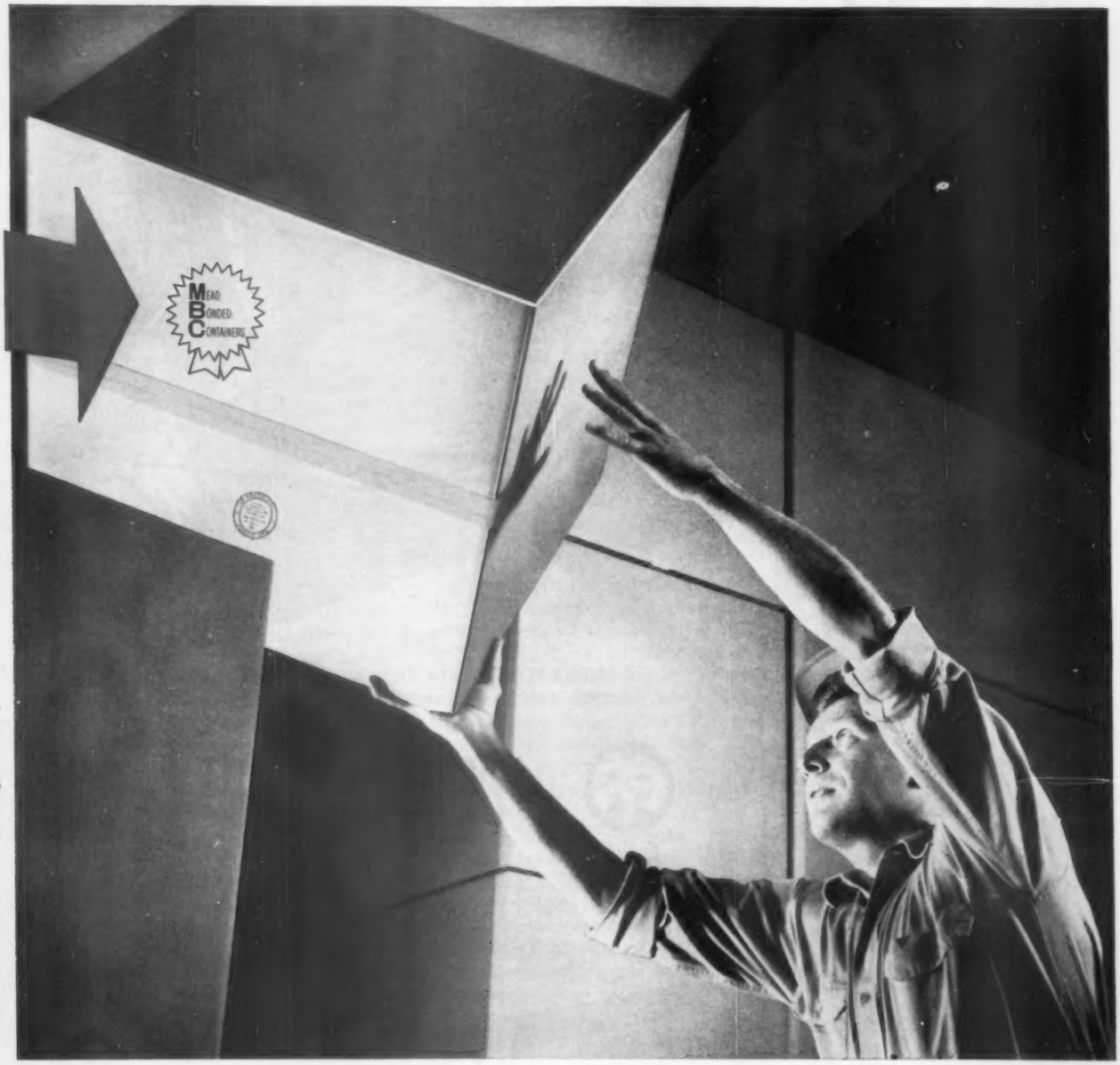

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". . . and now for the accessories you'd need."

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CORPORATION
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- Plating processes, materials
- Plastisols, protective coatings
- Titanium and Zirconium minerals
- Metals and alloys

For More Information Write No. 166 on Inquiry Card—Page 32

Washington Report

• Improved Productivity Key To Recovery

RECOVERY HAS REACHED a major milestone. Gross National Product has reached the $440 billion level. The all-time boom peak was $445.6 billion in the third quarter of '57.

In the last quarter of 1957 and the first half of this year, the Gross National Product dropped. With production, earnings, and business investment off considerably, the GNP ended its upward movement and began to go the other way. Now however, just about all forms of industrial activity — including automotive, steel, nonferrous, and construction—are beginning to move on a higher level.

Alongside this high level of industrial activity, the latest statistics on manufacturing employment show no sharp increase. Factories are turning out a high level of goods, with roughly a million fewer workers than were employed in '55, '56 or '57.

What has happened? The large industry investment in plant and equipment in 1955, 1956 and 1957 is now really beginning to pay off.

The biggest jump in new equipment spending took place between 1955 and 1956. However, this year industry put the new equipment to work on a selective basis. In the recession period, companies brought down their costs by running their most efficient units, but the true economies of automatic equipment are most apparent when they are operated at high rate.

Now, the economies are being translated into greatly improved productivity. The companies that put in new equipment in those three years are out ahead of the others.

Government analysts forecast that companies that did not make large investment in new equipment will have to start spurting in order to catch up. They see equipment spending rising from the current low levels and greatly improving next year.

All this means that the economic spotlight is on the purchasing agent now as never before. Inventory buying has picked up to bring it more in line with the level of new orders, but there is still no sign of speculative inventory buying. On an overall basis, however, there is a certain amount of liquidation of inventories going on, which will continue pretty much through the end of the year.

There is relatively little pressure on prices. Industry adopted many economies as a result of the recession. With an increase in volume shaping up, the profit picture looks brighter due to these cost savings.

Based on the present industrial improvement, there is no hint of shortages in any segment of the supply spectrum. Inventory buying is keeping pace with improved sales levels, not racing ahead in anticipation of future shortages or fast price spurts.

• Federal Reserve Still Fighting Inflation

THE Federal Reserve Board is watching the money markets closely—trying to fine tune the economy so that there will be enough money in circulation to finance full recovery, not just enough to feed inflation.

General strategy of the "Fed" has been to adjust rediscount rates as money tends to get too tight or too loose. At the crest of the boom last year, the rate was hiked to 3½%. At the bottom of the recession trough, the Federal Reserve dropped the rate to 1¾%.

This rate was looked upon as a desperation measure. It was thought in the "Fed" that once the tide was turned, the rediscount rate could be brought back up fairly quickly — by quarter points. The first such move was to raise it to 2%, with the belief that a quarter point in the rediscount rate would raise the prime interest rate by a quarter point. Instead, the prime rate jumped by

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1. 105C (Class A), oleoresinous, P.E. —BELDENAMEL*. Most uniform diameters of any film-coated wire (except *Celenamel*).
2. 180C—130C—105C (Class H, B, A) SQUARES and RECTANGULARS. Extremely close diameter tolerances —no "space" problems.
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Widest range of UL and CSA voltage and temperature ratings. Rubber—Neoprene—Silicone—Plastic—Asbestos—insulations with and without textile braid—complete factory stocks.

Engineered wires, tight quality control, assure over-all low-cost assembly in your plant—long trouble-free performance in service.

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BETTER ABRASIVES BUYING No. 2

how much does variety cost ?

No matter how you figure it, variety is often a costly proposition. Take grinding wheels, for example. There are over 250,000 variations to plague the purchasing agent. More are being added every day by orders for special grits and gradings, sizes and shapes which are *non-standard.* Such wide variety of product is costing you real money... because your *time* is involved—time for engineering, time for performance testing, and time spent waiting *delivery.*

Today, Carborundum offers you a simplified line of Job-Engineered NATIONAL STANDARDS of consistent high quality which will assure you grinding performance and finish second to none. Now, you can buy grinding wheels *off the shelf*—for *immediate delivery*... that will meet the majority of your grinding requirements. Each is *performance-proved* and backed by the engineering and field testing facilities of the world's most experienced abrasives manufacturer.

specify "Job-Engineered"

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WRITE FOR CATALOG OF NATIONAL STANDARDS, Form A-1489, and prove to yourself that "standards" will solve many of your abrasives problems. Address your request to The Carborundum Company, Dept. PM81-829, Niagara Falls, N. Y.

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Washington Report

a half point, which threw a note of caution in the Federal Reserve Board thinking.

Now the Federal Reserve Board is trying to convince the financial community that it can regulate inflation. It feels money can be invested at a reasonable yield, without the profit being eaten up by an erosion of the dollar value.

This is not an easy job, especially when the Government is operating at a big deficit—constantly borrowing to meet its running expenses.

• Electric Demand To Rise Sharply By '80

THE RATE OF GROWTH of electric utility loads has fallen off sharply as industrial requirements dropped considerably. However, Federal Power Commission officials see these requirements now rising in future years.

Estimates of demand are based on population growth. By 1980, the FPC anticipates a total installed generating capacity of 425 million kilowatts. At that time, industry will require an additional 20 million kilowatts each year to take care of obsolescence as well as growth.

The Commission figures that the utility industry will have to go sharply up to compensate for the off years of '57 and '58.

• More Leeway in Trade Discussions

NEWLY EXTENDED reciprocal trade program gives the President more latitude in adjusting our tariffs. This program works both ways—he can cut tariffs by 20%, but he can also increase them by 50% above their 1930 levels.

Importance of this ability to maneuver is that the six common market countries of western Europe will have established their common exterior tariffs by the middle of next year. If we are going to be able to work out concessions, we have to have a fairly loose trading position.

—A. N. Wecksler

SAVE WHEN THE HEAT IS ON

This 20 pound Ni-Resist casting made for the Schwitzer Corporation by Hamilton Foundry is the turbine casing of a diesel engine turbocharger. Exhaust gases which turn the impeller at speeds up to 90,000 rpm subject the housing to rapid cyclic temperature changes up to 1500° F. Any free scale formed at these temperatures could erode and eventually destroy the impeller blades. Ni-Resist was chosen for this part because it produces practically no free scale, it resists growth and oxidation at high temperatures, and it resists cracking under thermal shock.

Unit production costs are lowered by finding and using the most efficient material available. In this case, Ni-Resist castings combine design flexibility and machinability with long service life under severe temperature stresses. Ni-Resist castings from Hamilton Foundry have dimensional accuracy, uniform machinability, fine surface finish, a low rejection rate, and are delivered on schedule—a combination of factors which lower unit costs and insure Schwitzer's reputation for product quality.

When new and unusual design problems arise in the selection of metal and the casting of parts, you will find that the skill and integrity of your foundry is your best insurance that specifications—and delivery schedules—will be met.

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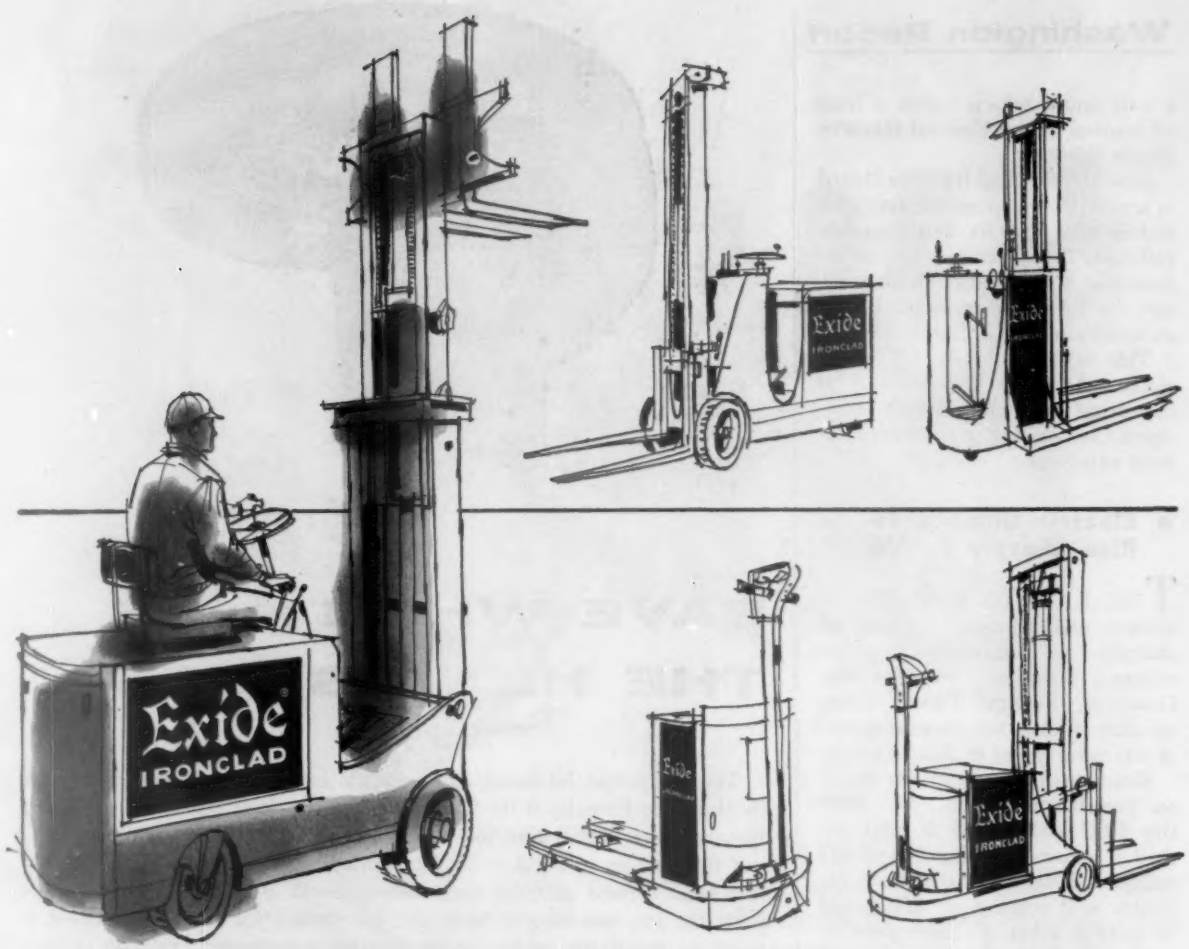


Now every electric industrial truck can

DO MORE WORK, COST LESS TO USE

New, more powerful Exide-Ironclad Batteries now available in sizes to fit *all* trucks

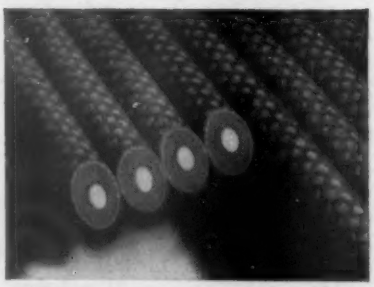
Take any electric industrial truck. Install one of the new higher capacity Exide-Ironclad Batteries and you can get more work out of it at a lower annual cost than you ever did before.

They pack up to 44% more power than batteries in the past. But these new Exide-Ironclad Batteries have the same outer dimensions . . . fit right into your present trucks . . . provide added power so your trucks can lift more, carry it farther, move it faster, make more trips. Yet they actually cost you less per ampere-hour and offer a longer life potential for greater long-range economy.

Save money, too, on applications where you don't need additional power. New Exide-Ironclad Batteries are available in the same capacity as old batteries, but in a more compact size and up to 15% lighter for greater flexibility and at a lower price.

When you buy batteries for your electric industrial trucks, make sure you get all the economy only the new Exide-Ironclad Batteries can offer you. Write for complete details. Exide Industrial Division, The Electric Storage Battery Company, Philadelphia 2, Pa.

Exide®



Here's the secret. Unique advanced tubular construction. Every positive plate packs more power. So every battery gives you greater efficiency—a more compact battery for a given capacity rating.

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Yes, when you try D-C, you open the door to a whole new world of shipping convenience. You benefit from . . .

- Exclusive, one-carrier DIRECT service from coast-to-coast.
- Fast, 2-man sleeper cab service that goes straight through, with no transloading. Saves up to 20% in running time.
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Discover this NEW WORLD of shipping service for yourself. Mark your next shipment and your next order "D-C."

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Chicago, Illinois . . . . . LA. 3-7440	New York, New York . LO. 4-3320
Cleveland, Ohio . . . . . SH. 9-1666	(N. Bergen, N. J.) . . UN. 3-0900
Colo. Springs, Colo. . . ME. 2-1486	†Owensboro, Kentucky MU. 3-5363
Denver, Colorado . . . . DU. 8-4567	Phoenix, Arizona . . . . . AL. 8-5321
Detroit, Michigan . . . . VI. 3-9505	Pueblo, Colorado . . . . . U. 3-4425
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District 5 Chairmen Plan Fall Programs

A MEETING of the chairmen of the education, public relations, and program committees of District 5 was held recently at the Mayflower Hotel, Washington, D. C. Thirty-two members were present, including representatives from all three committees of the nine local associations, plus several presidents and national directors of the district. Also in attendance were Harold A. Berry, national chairman on education; Nelson J. Gibbins, national chairman on public relations; and James M. Berry, former District 5 chairman on education.

The District 5 education chairman, Walter M. Prichard, was assisted by H. A. Berry, J. M. Berry, and Vice Chairman H. Spilman Burns. Paisley Boney, chairman District 5 public relations, and Nels Gibbins conducted a discussion on their respective committees work.

This early bird workshop in preparation for fall activities was met with great enthusiasm. All present greatly benefited from the round table discussions.

Said Henry R. Michel, president of the Carolinas-Virginia Purchasing Agents Association: "One cannot attend a meeting of this kind without being impressed and stimulated. Association members took a Saturday of their own time for a meeting, to contribute ideas and to get ideas which would further their association's aims and responsibilities for improving education and public relations in purchasing."

Jack G. Bradamore, N.A.P.A. vice president, District 5, said, in reference to the meeting: "The interest was keen and I strongly feel we are forming a prestige which will formulate and grow into continuous meetings of this caliber. All members attending were very attentive to the conversations conducted by the entire group."

Shown here are association members of District 5 who attended a meeting of the chairmen of the education, public relations, and program committees.

Photographed at the Beverly Hilton Hotel

"UNITED AIR FREIGHT HELPS US KEEP THE RETAILERS (AND GIRLS) HAPPY"

HARRY DURAN, *Traffic Manager*
Catalina Knitting Mills, Inc.
Los Angeles, Calif.

"To stay competitive in swim wear, you have to cover every retailer and sell your entire year's line for early delivery in just two months—April and May. We can do this, thanks to the speed and 80-city service of United Air Lines. Beyond this two-month peak, United gives us the flexibility to replenish fast-selling models on 'as needed' notice from our Los Angeles warehouse."

The 14,000 miles of United airways offer more than just market coverage. To many shippers, this scope represents profitably low inventories, reduced warehousing costs and high turnover.

"More than 70 United Mainliners leave Los Angeles daily, and United's Barrie Duggan sees that our shipments get on the first and fastest available flight. This speed is worth about 40 store orders to us."

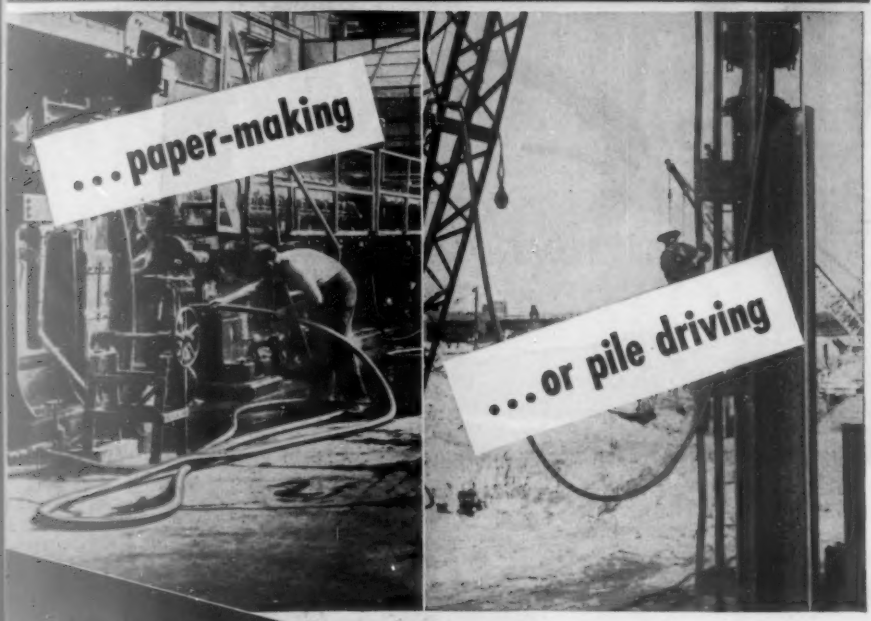
UNITED AIR LINES ®

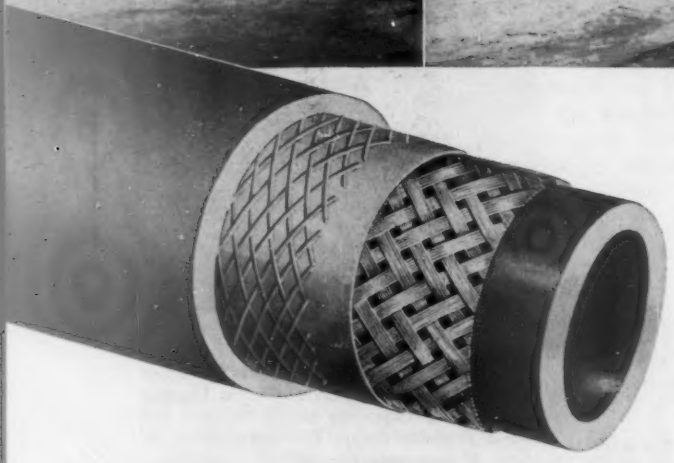
For service, information or free Air Freight booklet, call the nearest United Air Lines representative or write Cargo Sales Division, United Air Lines, 36 South Wabash Avenue, Chicago 3, Illinois.

IT COSTS NO MORE FOR EXTRA DEPENDABILITY—ON UNITED, THE RADAR LINE

For More Information Write No. 172 on Inquiry Card—Page 32

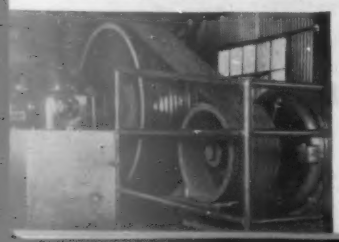
There's a Thermoid Hose for every job





Cut costs with Thermoid Conveyor Belting . . .

. . . and Thermoid Multi-V Belts



And for your job, too!

You'll find Thermoid has a hose that wears better, lasts longer, stays "on the job" to save you time and money. Each Thermoid Hose is built to do a specific job *best*. The same is true of Thermoid Conveyor Belting, Multi-V Belts and Friction Materials. Call your local Thermoid Distributor today.

Thermoid

Thermoid Company
Trenton, New Jersey
Nephi, Utah

Association News

Affleck Addresses Milwaukee Ass'n

Gordon Burt Affleck, N.A.P.A. president, speaking before the members of the Milwaukee Association.

Getting together before the meeting are, left to right, James E. Moriarty, Sivyer Steel Casting Co. and president of the Association; Mr. Affleck; and Jack T. Clancy, Kremers-Urban Co. and national director of the 3rd District of the National Association.

The Milwaukee Association of Purchasing Agents began its fall sessions with an interesting and thought-provoking program.

The principal speaker of the evening, Gordon Burt Affleck, president of the National Association of Purchasing Agents, presented an inspirational address: "I Can Get It Cheaper."

A pre-dinner discussion on traffic answered many of the questions that arise in the minds of purchasing agents when they attempt to get the most for their transportation dollar. Panel members for the discussion were: H. J. Bowman, traffic manager of S. C. Johnson & Son, Inc., Racine, Wis.; L. J. Hackl, general traffic manager of the Ladish Co., Milwaukee; and R. H. Heilman, director of transportation, A. O. Smith Corp., Milwaukee.

FOR MORE INFORMATION USE INQUIRY CARD PAGE 32

For More Information Write No. 173 ←on Inquiry Card—Page 32

Why Grandmother!

Stories on grinding wheel problems—just like the kind you tell the youngsters—can have a happy ending. And we're writing new ones day after day for plants where high grinding wheel costs and low production have been wolfing up profits.

If *you* are ready to "cry wolf," let us send CINCINNATI (PD)° WHEELS to the rescue. For *now* CINCINNATI Grinding Wheels offer POSITIVE DUPLICATION—a remarkable achievement in precision manufacturing and quality control that can *save you money—and increase your production.*

Through the CINCINNATI (PD) Manufacturing Process you are assured Positive Duplication of the original wheel *every* time you reorder. "On grade" with a CINCINNATI (PD) WHEEL means all future (PD) WHEELS will act and grind exactly alike.

Yet CINCINNATI (PD) WHEELS *are priced no higher than ordinary wheels.*

So, if grinding problems have you ready to shout for help, just contact your CINCINNATI Grinding Wheel distributor. Or, contact us direct and we'll send one of our representatives —men who know grinding and grinding machines as well as grinding wheels. Write, wire or telephone—Sales Manager, Cincinnati Milling Products Division, Cincinnati 9, Ohio.

Remember—*only* CINCINNATI Grinding Wheels give you . . .

(PD) POSITIVE DUPLICATION

CINCINNATI° *Grinding Wheels*

A PRODUCTION-PROVED PRODUCT OF THE CINCINNATI MILLING MACHINE CO.

°Trade Mark Reg. U.S. Pat. Off.

For More Information Write No. 174 on Inquiry Card—Page 32

Stanscrew service prevents problem for manufacturer of journal bearings

The wise manufacturer eliminates any possibility of fastener breakage *before* it can become a serious and expensive field problem.

As a prime example, a leading manufacturer of sealed cartridge journal bearings was concerned about the cap screws used to hold one essential part—the thrust cap—in place. They knew the lateral movements of a railroad car resulted in thrust on this cap, imposing extremely heavy loads on these fasteners.

A call to their industrial distributor soon had a Stanscrew fastener specialist on the job. He recommended continued use of a torque wrench and worked out the proper setting so that each fastener carried its rated load. Subsequent laboratory tests proved these recommended torque settings insured against fastener breakage.

The manufacturer accepted these recommendations . . . and thus eliminated a potentially serious problem before it could develop. The torque settings and technique developed by the Stanscrew representative have been incorporated in the company's instruction and maintenance manual to insure proper maintenance procedures.

Technical assistance like this is just one of the many reasons more and more manufacturers are standardizing on Stanscrew. Trained specialists, backed by an outstanding engineering staff, can solve your particular fastener problem. In addition to assuring the dependability of your product, often they can save you money . . . for example by substituting a standard fastener for a costly "special".

Call your Stanscrew distributor today for the answers to your fastener problems. He will see that the Stanscrew Fastener Specialist visits you without delay.

STANSCREW FASTENERS

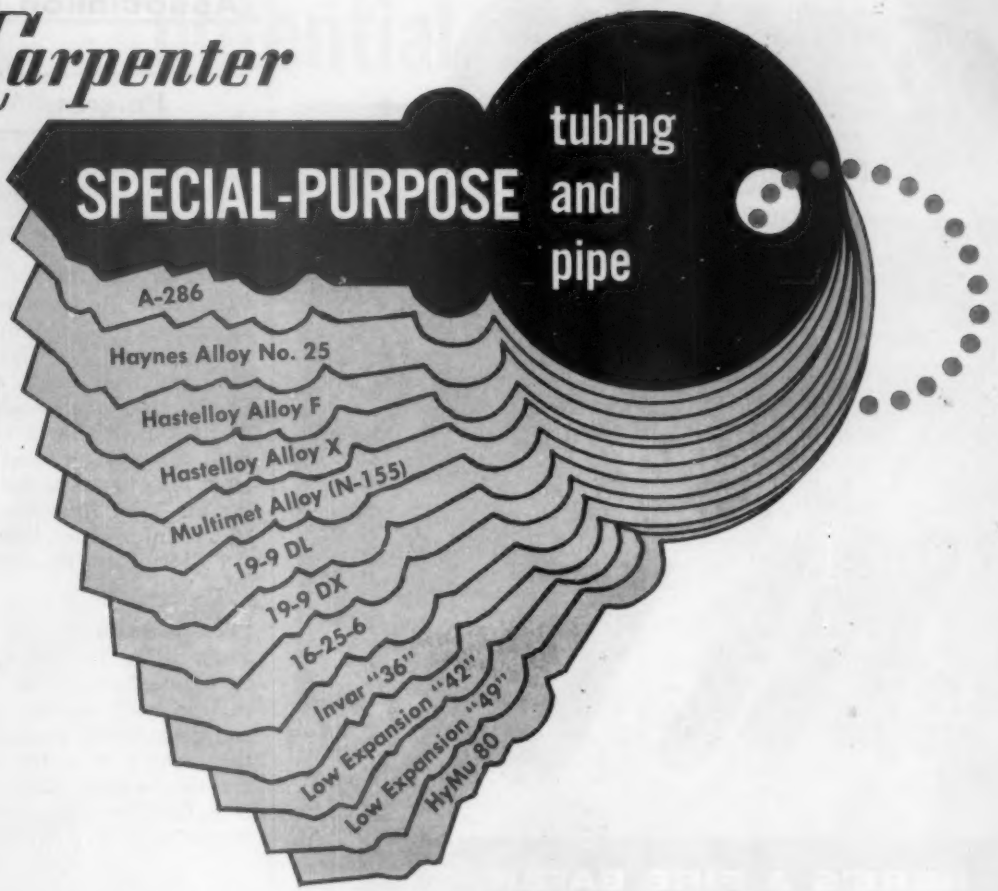
CHICAGO | THE CHICAGO SCREW COMPANY, BELLWOOD, ILLINOIS
HMS | HARTFORD MACHINE SCREW COMPANY, HARTFORD, CONNECTICUT
WESTERN | THE WESTERN AUTOMATIC MACHINE SCREW COMPANY, ELYRIA, OHIO

STANDARD SCREW COMPANY 2701 Washington Boulevard, Bellwood, Illinois

For More Information Write No. 175 on Inquiry Card—Page 32

Carpenter

SPECIAL-PURPOSE tubing and pipe



12 master keys to many NEW needs

• As fast as new developments in products and equipment create new needs in tubing and pipe for corrosion and heat control, Carpenter is ready with the answers. Whatever it takes, Carpenter makes . . . to meet the challenge of technological progress.

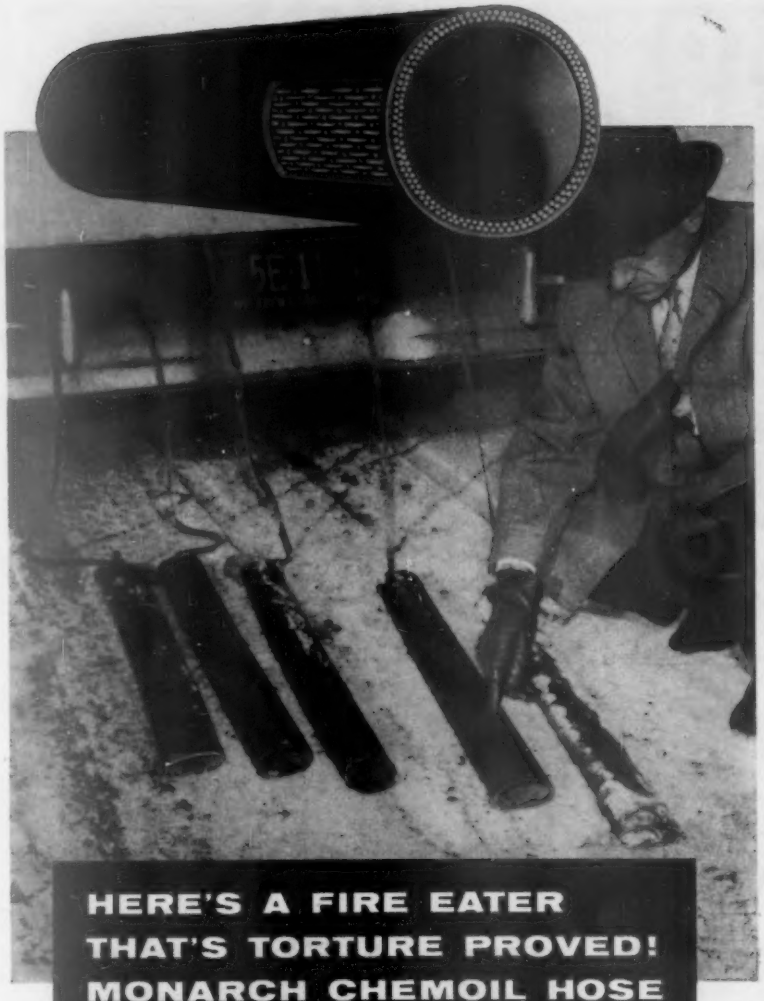
Listed above are 12 Special-Purpose types of Carpenter tubing and pipe that answer today's needs for high-temperature, low-expansion, high-permeability and corrosion-resistant applications. These super-stainless and high alloy grades meet a broad range of tubing and pipe requirements for vital parts of jet aircraft, missiles, rockets, nuclear energy equipment, instruments, electronic devices, process equipment and other advanced developments. Their properties, recommended uses and other technical data are contained in a new bulletin—T.D. 125.

Write for a copy on your company letterhead. Put your special-purpose requirements for tubing and pipe in Carpenter's capable hands by contacting our nearest office. The Carpenter Steel Company, Alloy Tube Division, Union, N. J.

your master key to cost-savings

special-purpose tubing and pipe

For More Information Write No. 176 on Inquiry Card—Page 32



The 5 lengths of fire hose pictured here were drag tested over a 30 mile stretch of the New York State Thruway. Only Monarch Chemoil hose survived with no loss in original burst strength.

Hewitt-Robins torture tests, such as this one, have proved conclusively that Monarch Chemoil hose has superior resistance to heat, flame, abrasion, aging, and deterioration by acids, strong alkalis, and oil and gasoline. Highly flexible, requiring absolutely no drying time, this Hewitt-Robins hose represents the ideal in light-weight, oil-proof fire hose.

Monarch Chemoil fire hose is available from factory stock in 1½", 2" and 2½" sizes. Most mandrel made hose is available in 75 foot lengths. For information or service, contact your local H-R representative, or Hewitt-Robins, Stamford, Connecticut.

HR HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS...POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE...VIBRATING CONVEYORS, SCREENS & SHAKEOUTS

H-R Product Manufacturing Plants in Buffalo, N. Y. • Chicago, Ill. • King of Prussia, Pa. • Passaic, N. J. Amsterdam, Holland • Johannesburg, South Africa • London, England • Montreal, Canada • Paris, France

For More Information Write No. 177 on Inquiry Card—Page 32

Association News

Program Aids

To assist program chairmen in planning association meetings and company conferences, available film and other program aids will be listed in these columns from time to time.

"The Base Procurement Story". Black and white film tells how local merchants can get a slice of the one billion dollars the United States Air Force spends annually at its United States bases. Outlines the steps a local merchant must take to sell to his neighboring air base. Available from the Public Information Officer of any Air Force base. Runs 26 minutes.

"Treasure Chest". Film gives the story of the tin can and how it continuously plays an important part in economically preserving and distributing products. Traces the making of a tin can. A 27 minute, sound film. Available from the advertising dept., United States Steel Corp., Pittsburgh, Pa.

"3M-Matic". Economies of proper tape usage, and advantages of mechanically dispensed and applied pressure sensitive tapes are shown in a 32-minute color film. Available from Minnesota Mining and Manufacturing Co., St. Paul, Minn.

"More Than Just Steel". Tells the story of special-purpose sheet steels, from electrical steel and enameling iron to special zinc-coated and aluminum-coated steels of today. 30 minutes, color, sound. Available from the Product Information Service, Armco Steel Corp., Middletown, Ohio.

"Small Business U.S.A.". For the guidance of small business management. Based on actual small company case histories taken from the credit files of Dun & Bradstreet, Inc. A 30-minute black and white film. Available from Ideal Pictures, Inc., 58 East South Water St., Chicago, Ill.

"potential purchase savings" with ESSEX

LIKE YOU we don't judge purchases on a cost per unit basis . . . but have an insistent regard for "potential purchase savings" in terms of end product, performance, and value. That licks problems for both of us.

Another value potential is the Essex single source plan, with its complete family of matched products.

Check with your engineers on Essex, its products, quality and production maturity.

Call your local Essex application specialist to learn more about this practical component purchasing plan . . . or write

RBM® **RBM Relays**

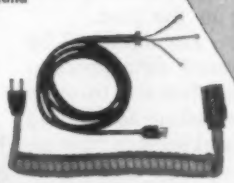
Low cost, high quality relays: general purpose, open and hermetically sealed, motor starting, A.C. industrial contactors and starters.

RBM Controls Division, Logansport, Indiana

WIRE SX PRODUCTS® **SX Wire and Cable**

A complete line of appliance wiring material, radio, television and electronic hook-up wire, 200° C high temperature Sil-X wire, automotive wires and cables, and flexible cords.

Wire and Cable Div., Fort Wayne, Indiana



® **CL Coiled Cords—Cord Sets**

Plastic and rubber power supply cords. Terminations of all types (molded plastic and rubber). Complete line of Coiled Cords including HPN.

Cords Limited Division, DeKalb, Illinois

WIRE SX PRODUCTS®

ESSEX WIRE CORPORATION FORT WAYNE 6, INDIANA

For More Information Write No. 178 on Inquiry Card—Page 32

How to Tighten Inventory Control

The operator is surrounded with data processing equipment which enabled Gregory & Leonard to increase the inventory turnover to five times a year.

GREGORY & Leonard Office Equipment Company, Detroit, Michigan has succeeded in transforming the purchasing agent from a "detail man," plagued by a steady stream of minor chores, into an "analyst" who is a valuable member of the management team.

An automated inventory control system did the trick.

Talking automation today can be deceptive, for the word means different things to different people. Simply stated, Gregory & Leonard has a system which is automatic enough to signal a purchasing agent in writing when the stock of an item reaches a predetermined ordering point. It is automatic enough to write its own purchase orders.

Accurate purchase forecasting was the thing desired when they set out to develop a new inventory control procedure. Back orders were a prime source of irritation to customers and embarrassing to the office supply and equipment dealer. Management decided that on the first day of each month they should be able to anticipate purchasing needs for the following month, making back orders a thing of the past.

This has been accomplished by IBM punched-card data processing in their own office and through the use of the machine accounting facilities of a local service bureau. Punched-card data processing, in fact, has been the medium which has given purchasing much-needed relief from the burden of detail work.

The heart of the inventory control system, since it is the source of data being processed, is an IBM Cardatype installation. With this unit, one employee performs the entire billing operation—approximately 2900 invoices—each month. The Cardatype at G & L's office combines a card-reading control unit; a file of customer cards and product cards representing inventory; two typewriters which produce invoices and daily billing tallies, and a card-punching unit which produces updated inventory cards as a byproduct of the billing operation.

Another direct byproduct of the billing operation is automatic flagging of invoice copies, bringing to the attention of the purchasing agent those items which have reached the order point.

For each invoice written, the unit creates a total card summarizing the statistics in that invoice. These cards, representing 125 daily invoices, are sent weekly to S. J. Tesauro Company, a machine accounting service bureau.

Inventory detail cards produce numerous reports and analyses for management, including the essential "buy-report" which gives the purchasing forecast for the following month.

By making a machine comparison of the order point against the current inventory status as indicated in a sales history card, the service bureau is able to select automatically those cards for items which must be ordered during the month. By collating in cards representing sources of supply, the punched-card data processing equipment is able to print automatically the purchase orders for that month.

This system yields benefits to overall management, as well as to the purchasing function. Among them are:

Reduced inventory: The total dollar volume of inventory dropped approximately 10% within the first five months.

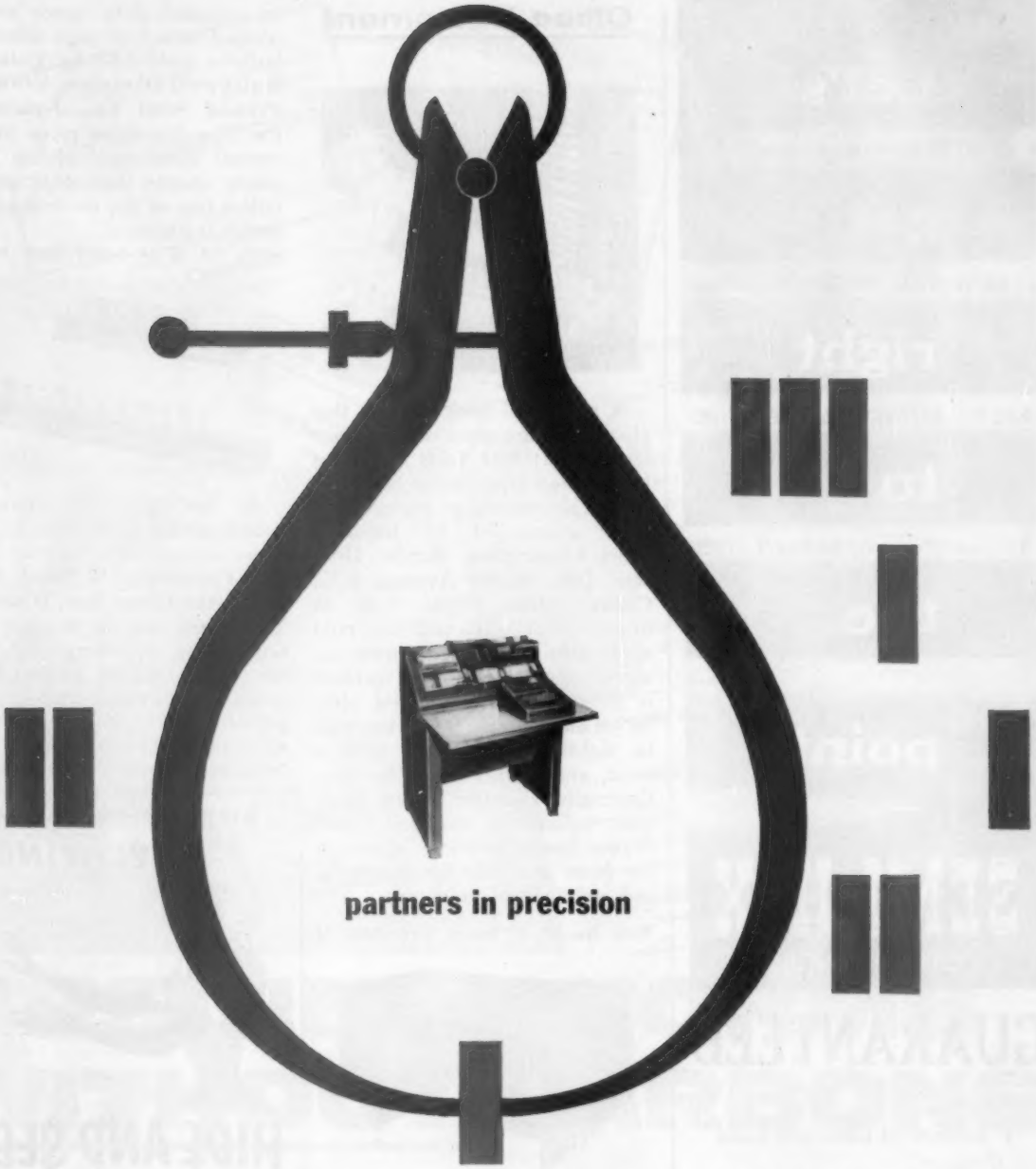
Increased turnover: Many items now are being turned as often as five times a year.

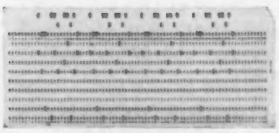
Economy: The billing, clerical and inventory-taking work required by the previous system took up the time of six persons. All are handled now by one Cardatype operator, except for a few hours needed for annual inventory.

Accuracy: The G & L installation is maintaining inventory records as close to an actual count as possible. The big advantage has been the elimination of the human error factor in repeated countings.

Billing speed: Fast delivery is a prime selling point. Orders arriving before the afternoon cut-off time are shipped out the same day. Rapid billing permits enclosure of invoices with the shipments. And the mailing costs which have been saved by this method amount to nearly $6,000 a year.

Development of a system which cuts as sharply into clerical work as this one does has reduced the likelihood of back orders to a minimum. It has created a general improvement in management areas such as inventory investment.





Safeguarding the performance and dependability of IBM Cards are daily testing, unceasing research, plus the know-how from more than 40 years of card manufacturing experience. The resulting quality control program guarantees a close working partnership of precision between IBM Cards and IBM Machines. When you insist on IBM Supplies for IBM Equipment, you benefit in every way from precision-engineered products—specifically designed to insure accurate and reliable data processing.

DATA PROCESSING • SUPPLIES • ELECTRIC TYPEWRITERS • TIME EQUIPMENT

IBM SUPPLIES

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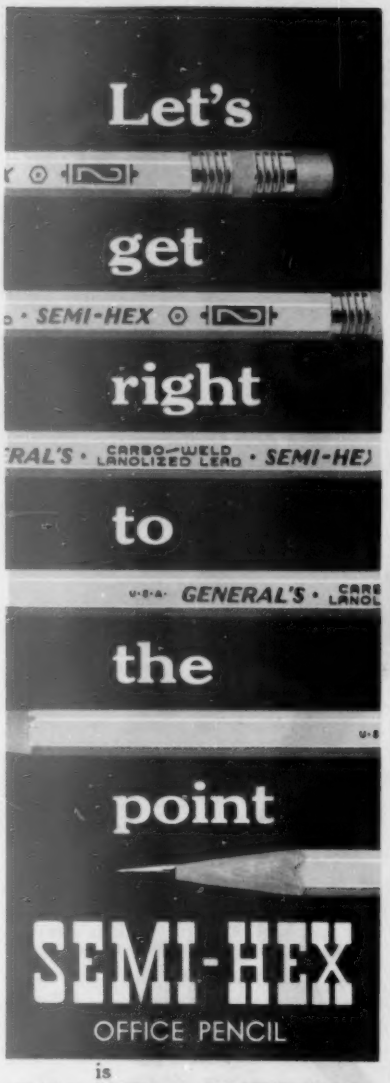

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Every lead is Carbo-Welded

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See your local dealer. Or write us on your company letterhead for free samples.

GENERAL *pencil company*
Jersey City 6, New Jersey

For More Information Write No. 180 on Inquiry Card—Page 32

Office Equipment

A new **steel filing cabinet** that eliminates the possibility of permanent wrinkles, folds and loops in punched tapes while being retained for re-use or storage, has been announced by **Republic Steel Corporation, Berger Division, 1038 Belden Avenue, N.E., Canton, Ohio.** Fitted with 30 drawer inserts, the unit can hold up to 4500 tapes. Each drawer insert of the punched tape cabinet is fitted with 150 tapered pins, ¼" in diameter, so that tapes may be tightly rolled, fixed with a band, and slipped over the pins. Especially suitable where large tape volume is involved, each drawer insert provides space on the front and side for numerical and alphabetical indexing.

Write No. 18 on Inquiry Card—Page 32

Lyon Metal Products, Inc., Aurora Illinois has entered the desk field with a line of **office desks and tables.** Primarily a general purpose desk, the new line will be sold through Lyon's regularly established dealers. The new items announced include a full size, 60" x 30" double pedestal desk. The table top extends over the modern panel-type legs to permit comfortable seating on all sides of the conference table.

Two new **executive desks** with over 20% more work area than standard desks but no increase in occupied floor space are described in a four-page illustrated bulletin published by **Columbia-Hallowell Division, Standard Pressed Steel Co., Jenkintown, Pa.** The literature gives various overall dimensions of the irregularly shaped desk tops and details a few of the more important design features.

Write No. 19 on Inquiry Card—Page 32

An attractive, distinctive and indestructible **name plate** has just been announced by **Acme Products Company, 416 North Madison Street, Green Bay, Wisconsin.** The letters may be changed anytime. New alphabets and bases can be purchased separately to meet your requirements. The plates come in three sizes, 6½", 10" and 13" wide base.

Write No. 20 on Inquiry Card—Page 32

ARE YOUR PAPERS PLAYING...

HIDE AND SEEK?

Filing is important only if the *finding* is easy. Can you *always* put your hand on the letter, invoice, order, report or other paper you want, *instantly?* Are your files neat, compact, space saving? Your Stationer will be glad to explain the advantages of ACCO-filing to keep your records safe, and finding quick. See him now!

"ACCO BOUND PAPERS ARE SAFE PAPERS"

ACCO PRODUCTS
Division of NATSER Corporation
Ogdensburg • New York
In Canada: Acco Canadian Co., Ltd., Toronto

For More Information Write No. 181 on Inquiry Card—Page 32

BUSINESS FORMS WITHOUT CARBONS

NCR PAPER DOES IT!... produces cleaner, clearer copies

Business forms users everywhere are discovering that NCR Paper speeds up their work. Without using carbon paper or even any carbonization, this amazing paper makes perfect copies of sales slips, invoices, premium notices, stock requisitions—any one of hundreds of applications where clean, clear copies are needed.

Non-smearing NCR Paper, perfected by the research laboratories of The National Cash Register Company, eliminates smudging of copies or fingers and is easy to handle because it requires no carbon inserts. Up to five legible copies can be made with a standard typewriter, ball-point pen or pencil and eight or more with a business machine or electric typewriter.

NCR Paper is simple to use. Just put together several forms. Copies are obtained from hand written or business machine or typewriter forms. Finished copies are always neat and clean, easy to read.

Have your forms printed on NCR Paper by your present forms supplier. You'll be amazed how easily it solves the problem of producing multiple copies. You'll get better, cleaner copies in less time! Phone your present forms supplier, today, for further information.

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1039 OFFICES IN 121 COUNTRIES • HELPING BUSINESS SAVE MONEY

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NCR PAPER AND SUPPLIES
ACCOUNTING MACHINES
ADDING MACHINES • CASH REGISTERS

For More Information Write No. 182 on Inquiry Card—Page 32

Information For Your Catalog Files

ADHESIVES

U. S. Government specifications for a wide variety of adhesives, coatings and sealers are listed in 23-page, 9" x 11½" catalog. Coatings meeting these specifications are listed.

Minnesota Mining & Mfg. Co.

Write No. 1 on Inquiry Card—Page 32

AIR CONDITIONERS

Bulletin No. 2900 (20-pages) describes a line of cabinet air conditioners. Units have air volume range from 200 to 1400 cfm; cooling capacity of 1 to 5 tons; heating capacity of 25 to 100 mbh.

Ilg Electric Ventilating Co.

Write No. 2 on Inquiry Card—Page 32

CAMS

A 12-page brochure covers design and functions of two and three dimensional cams. Their uses and formulas are given. Special 3D cams for unusual control applications are illustrated.

Parker-Hartford Corp.

Write No. 3 on Inquiry Card—Page 32

CASTINGS

Advantages and uses of malleable iron, gray iron, aluminum and magnesium castings are pointed out in a 30-page brochure. The information is supplied in quick question-and-answer form.

Dayton Malleable Iron Co.

Write No. 4 on Inquiry Card—Page 32

COILS

A calculator aids coil stock users. It determines weights and lengths of steel, brass and aluminum coils. Calculator indicates most desirable coil weights to order for projected work.

F. J. Littell Machine Co.

Write No. 5 on Inquiry Card—Page 32

COMPUTERS

Manual U1518 devotes 115 pages to describing a new electronic computing system. The system makes it possible to communicate with computers in language, instead of with mathematical symbols.

Sperry Rand Corp.

Write No. 6 on Inquiry Card—Page 32

CONNECTORS

Precision miniature connectors for the aircraft and electronic industries are covered in a 40-page, 4-color catalog. Full specifications are given. Outline drawings and photos supplement the text.

DeJur-Amsco Corp.

Write No. 7 on Inquiry Card—Page 32

ELECTRONIC PRODUCTS

Hundreds of new products for the radio-television and electronic industry are listed in an 80-page catalog, No. 158. Included are chemicals, hardware, switches and service tools.

General Cement Mfg. Co.

Write No. 8 on Inquiry Card—Page 32

FIRE FIGHTING EQUIPMENT

Catalog No. L-1433 devotes 16 pages to a line of industrial fire fighters. Information is supplied on stationary and mobile fire apparatus, equipped with high pressure fog.

Food Machinery & Chemical Corp.

Write No. 9 on Inquiry Card—Page 32

HYDRAULIC CYLINDERS

Engineering data and full specifications on air and low pressure hydraulic cylinders are supplied in catalog No. PMC 58. The units, with 1½" to 6" bores, are mounted in 11 standard types.

Petch Mfg. Co.

Write No. 10 on Inquiry Card—Page 32

GRINDING WHEELS

A line of grinding wheels, featuring man-made diamonds, is described in a 24-page catalog. The wheels, only available as vitrified and resinoid types, are up to 35% more efficient.

Simonds Abrasive Co.

Write No. 11 on Inquiry Card—Page 32

MAINTENANCE

Folder X-1820, 12-pages, 4-color, describes maintenance management programs. Folder analyzes proper utilization of maintenance craftsmen. Inventory maintenance and control are covered.

Sperry Rand Corp.

Write No. 12 on Inquiry Card—Page 32

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AMERICA'S MOST WIDELY USED WRAPPING PAPER

Tough, pliable, with all the original strength of the wood fibres. GATOR HIDE® protects your products, your sales, your profits.

Volume-produced in natural kraft, white or colors. In weights and sizes to meet every wrapping need. And, when custom-imprinted, GATOR HIDE® wrapping gives your products valuable extra advertising and identification through all channels of distribution.

If you have a protection problem in wrapping, handling or shipping, call us. You'll get immediate service on all sizes, weights and colors from

your most dependable source of supply . . .

INTERNATIONAL PAPER

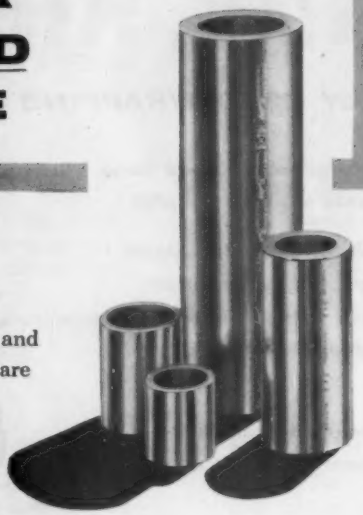
SOUTHERN KRAFT DIVISION
NEW YORK 17, N. Y.

For More Information Write No. 183 on Inquiry Card—Page 32

. . . now your distributor can supply **both**

Bunting®

CAST OR SINTERED BRONZE



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Stock sizes of Bunting Cast Bronze and Sintered Bronze Bearings and Bars are available everywhere in America. Every one is a precision product of scientifically exact manufacturing methods, meeting on every point the highest standards of quality as defined by modern mechanical engineering and metallurgy.

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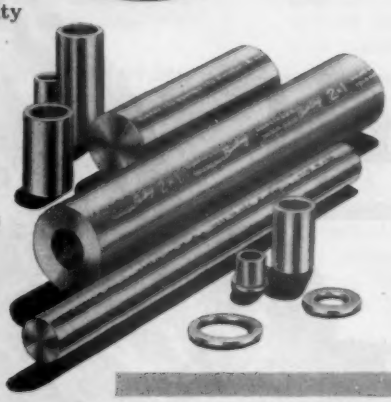
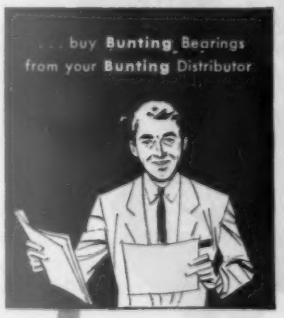
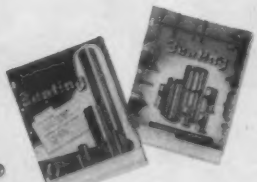
Distributors Associations
1952 1956 1958





Your Bunting distributor is listed in the classified section of your telephone directory usually under Bars — Bronze, and Bearings — Bronze. Two Bunting factories and eleven Bunting Branch Warehouses expedite distribution in all areas. Ask your local Bunting distributor or write for catalogs.



Ask for
Catalog No. 58-Cast Bronze and Sintered Bronze Bearings and Bars
Catalog No. 258-Electric Motor Bearings and Cast Bronze Bars

Bunting®

BUSHINGS, BEARINGS, BARS, AND SPECIAL PARTS OF CAST BRONZE AND POWDERED METAL

THE BUNTING BRASS AND BRONZE COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

For More Information Write No. 184 on Inquiry Card—Page 32

Catalog Files

MODELLING KIT

Manual Z1-02 (80 pages, c-colors) explains a system for making precision working models of almost any machine, drive or mechanism. Two kits (one with 4700 parts) are described.

FAC Div.

Write No. 13 on Inquiry Card—Page 32

NICKEL ALLOYS

A 42-page price schedule features Monel, Inconel, Inconel X, nickel clad copper and other special nickel alloys. Tables, comparing gages, electrical properties and specifications, are included.

H. K. Porter Co., Inc.

Write No. 14 on Inquiry Card—Page 32

POLYETHYLENE PACKAGING

A copiously illustrated booklet shows how properties of polyethylene make it an ideal packaging material for numberless products. The plastic can be used as coatings, films and moldings.

U. S. Industrial Chemicals Co.

Write No. 15 on Inquiry Card—Page 32

POWDER METALLURGY

Applications of a wide variety of gears, made by powder metallurgy, are covered in an 8-page booklet. Gears of all types made from bronze, brass, iron and alloy steel are discussed.

Metal Powder Industries Federation

Write No. 16 on Inquiry Card—Page 32

PUMPS

Positive displacement rotary pumps are described in catalog No. 100, as well as relief valves in sizes from ⅜" to 1½". Pump capacities are 1 to 200 gpm and pressures up to 1500 psi.

Tuthill Pump Co.

Write No. 17 on Inquiry Card—Page 32

ARE YOU GETTING SHORT CHANGED ON YOUR SHIPPING DOLLAR?

Some airfreight and truck carriers today advertise so-called "bargain" rates which actually impose *higher* minimum weight charges and mean *less* service. Be sure you compare Railway Express rates *and service* before you ship with any other carrier.

Here are down-to-earth facts on Railway Express Service

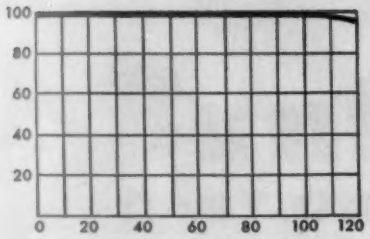
WIDEST COVERAGE—Railway Express serves some 23,000 communities to give you mass distribution—with *one company responsibility*. You reach *every* major market in the U.S., and with Railway Express International Service, most every major market abroad. No more worries about delays and divided responsibility in transfers between two or more carriers.

SPECIAL LOW RATES—You get door-to-door delivery, at no additional cost within REA vehicle limits in U. S. A. And Railway Express offers special low commodity rates on ready-to-wear merchandise, graphic arts materials, hosiery, shoes, drugs, import-export traffic and many other categories. Call your nearest Railway Express Agent.

RAILWAY EXPRESS AGENCY

For More Information Write No. 185 on Inquiry Card—Page 32

% STILL OPERATING



% RATED LIFE

If you want reliable transformers

..don't overlook this old solution

Right now, you demand more from transformers than ever before. You must have high reliability, even at extreme altitudes, and you need smaller lighter units.

Used, and *proved*, for decades, oil-encased transformers should not be forgotten in a search for new methods.

Everyone knows the advantages: effective convection of heat, excellent insulating properties, complete insurance against hidden leaks. Oil-*sealed* types (with a nitrogen bubble) are good, light, high-altitude transformers. Gas-free oil-*filled* types (with a bellows to allow for heat expansion) withstand very high voltage stresses. Except in the smallest sizes, they save space, too.

You can place several high voltage units close together in a single oil-filled case, and save case weight. Those connections moved inside the case no longer need large insulators. Even the units themselves can be smaller. This all adds up—particularly in high altitude service—to interesting savings in space and weight.

We make all sorts of transformers and special assemblies for the communication industry: encapsulated, cast in epoxy or foam, and just potted in pitch. But oil transformers still have an important place.

Whatever type you need, we'll be glad to hear from you. Our facilities in design, production, and quality control are at your service. Our experience, too.

CALEDONIA

ELECTRONICS AND TRANSFORMER CORPORATION

Dept. P-10, Caledonia, N. Y.

In Canada: Hackbusch Electronics, Ltd.
23 Primrose Ave., Toronto 4, Ontario

For More Information Write No. 186 on Inquiry Card—Page 32

Letters To The Editor

IT WAS A PLEASURE

I would like to take this opportunity to express appreciation for myself, my staff and the corporate management of Rheem Manufacturing Company for the fine piece of work you did in preparing the story on Rheem Purchasing which appeared in the September 15 issue of PURCHASING Magazine. Very favorable comments have been received both from within and from without our company.

We heartily endorse the effort your organization, through its magazine, is making to enhance the position of the purchasing profession in industry. For ourselves, we will continue to strive for increased efficiency and effectivity of the purchasing function for our company. Hence, we value highly the information which is made available to us through your publication.

G. J. Papas
Director of Purchasing
Rheem Manufacturing Company
New York, New York

POOR ADVICE

I think you inadvertently gave a little poor advice in answer to the Nuclear Development Corporation's purchasing agent. He wrote in the Letters to the Editor (August 4 issue) concerning government publications on subcontracting.

You suggested that he contact a contracting officer in the armed services for a copy of the ASPR. I was a contracting officer on my last job and can tell you that this will avail Mr. Jacobson nothing. A contracting officer's hands are tied when it comes to obtaining sets of procurement regulations; tied by endless channels and red-tape.

I believe you should have referred the inquirer to the Superintendent of Documents, who has innumerable publications for sale.

S. E. Denny
Harbor City, Calif.

• *We are printing this letter in case Mr. Jacobson is still mired in governmental red-tape and in the hope it will prevent the ensnarement of anyone else.*

BUSINESS DISHONESTY

I found your September 1 issue as interesting and timely as your preceding issues have been.

We were particularly interested in the two articles titled, "Dishonesty in the Purchasing Department" and "No Gifts, Please."

The latter article, written by a sales manager, finally puts the issue of giving and receiving gifts in its true perspective.

Will you please forward ten copies of each of the articles mentioned to this office and bill us for any charges for this valued service?

R. R. Gammon
Purchasing Agent
United States Steel Products
Alameda, California

It would be appreciated if you would send us three sets of tear sheets of the following articles which appeared in the September 1, 1958, issue of PURCHASING: Crisis in Business Ethics; Purchasing Ethics: Is There a Problem?; Purchasing Executives View the Ethics Problem; Dishonesty in the Purchasing Department; No Gifts, Please.

If tear sheets are not available we would like your permission to reproduce these articles for distribution to our own people.

I enjoyed reading these articles and think they will serve a definite purpose to the people in purchasing offices across the country.

C. E. Curry
Manager of Purchases
The Standard Oil Company
Cleveland, Ohio

In the September 1 issue of PURCHASING appears the following article: "Dishonesty in the Purchasing Department."

We would very much appreciate receiving your permission to reprint for distribution to our members only. Proper credit would, of course, be given.

Another fine product gains NEW S.A. By Switching to the Saginaw Screw*

FRANK S. BUCKINGHAM
Chief Engineer, Static Testing Machines, Baldwin-Lima-Hamilton Corp., reports: "Using a Saginaw Screw on this tester reduced required horsepower from 15 to 5."

WORLD'S MOST EFFICIENT ACTUATOR OPERATES 75-TON BALDWIN TESTER WITH 5 H.P. INSTEAD OF 15

When you can cut power requirements 66% you give your product a lot more *Sales Appeal—and that's just what Baldwin-Lima-Hamilton has done by switching from an acme thread to a preloaded Saginaw b/b Screw. What's more, it speeds up cycling and ends fretting corrosion, too.

The truly amazing ability of the Saginaw Screw to convert rotary motion to linear motion with over 90% *efficiency* is saving power, space, weight and assuring smoother, more dependable performance in countless products from miniature electronic controls to giant production equipment.

Perhaps the Saginaw Screw can give *your* products that vital new **S**ales **A**ppeal you're looking for right now. To find out, write or telephone Saginaw Steering Gear Division, General Motors Corporation, Saginaw, Michigan—*world's largest producers of b/b screws and splines.*

Give your products NEW SALES APPEAL... switch to the* **Saginaw ball bearing **Screw**

For More Information Write No. 187 on Inquiry Card—Page 32

STANLEY Electric Tools

⅞ HP—H264—$62.50
1¼ HP—H267—$82.50
(INTRODUCTORY PRICES)

NEW! HEAVY-DUTY!

Router with the light . . . and lead on all others!

NEW BUILDERS KIT—$166.50. Router, plane and hinge templet—ready to take to work!

NEW POWER PLANES—⅞ HP: $89.50. 1¼ HP: $109.50. Also router adapter kit — $44.95.

Look at this router closely. It is the most advanced you will see for years! New power, precision, safety—plus a whole new standard of handling and adjusting ease.

NEW MICROMETER DEPTH ADJUSTMENT permits settings as fine as .004 of an inch.

COMFORTABLE 3-POSITION HANDLES provide excellent stability, control for all cuts.

UNIQUE SPOTLIGHT—throws bright beam on the work area; gives perfect visibility.

NEW CLAMPING LEVER releases or locks motor in base with a simple flip of finger.

RECESSED SAFETY SWITCH prevents accidental "turn-on." Locks shaft automatically. Only one wrench needed to tighten chuck.

Ask your supplier to show you the 260-series today! Stanley Electric Tools, Div. of The Stanley Works, New Britain, Connecticut.

Prices slightly higher in Canada.

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY

STANLEY

This famous trademark distinguishes over 20,000 quality products of The Stanley Works—hand and electric tools • builders, industrial and drapery hardware • door controls • aluminum windows • stampings • springs • coatings • strip steel • steel strapping—made in 24 plants in the United States, Canada, England and Germany.

For More Information Write No. 188 on Inquiry Card—Page 32

Letters

Many thanks for your attention.
Jehu R. Derrickson
Executive Sec.-Treasurer
Formed Steel Tube Institute
Cleveland, Ohio

• *There is a small supply of tearsheets of all articles in the Sept. 1 issue. We will be pleased to send them to readers on a first-come, first-served basis. Requests for permission to reprint are generally honored but we ask that the request be in writing.*

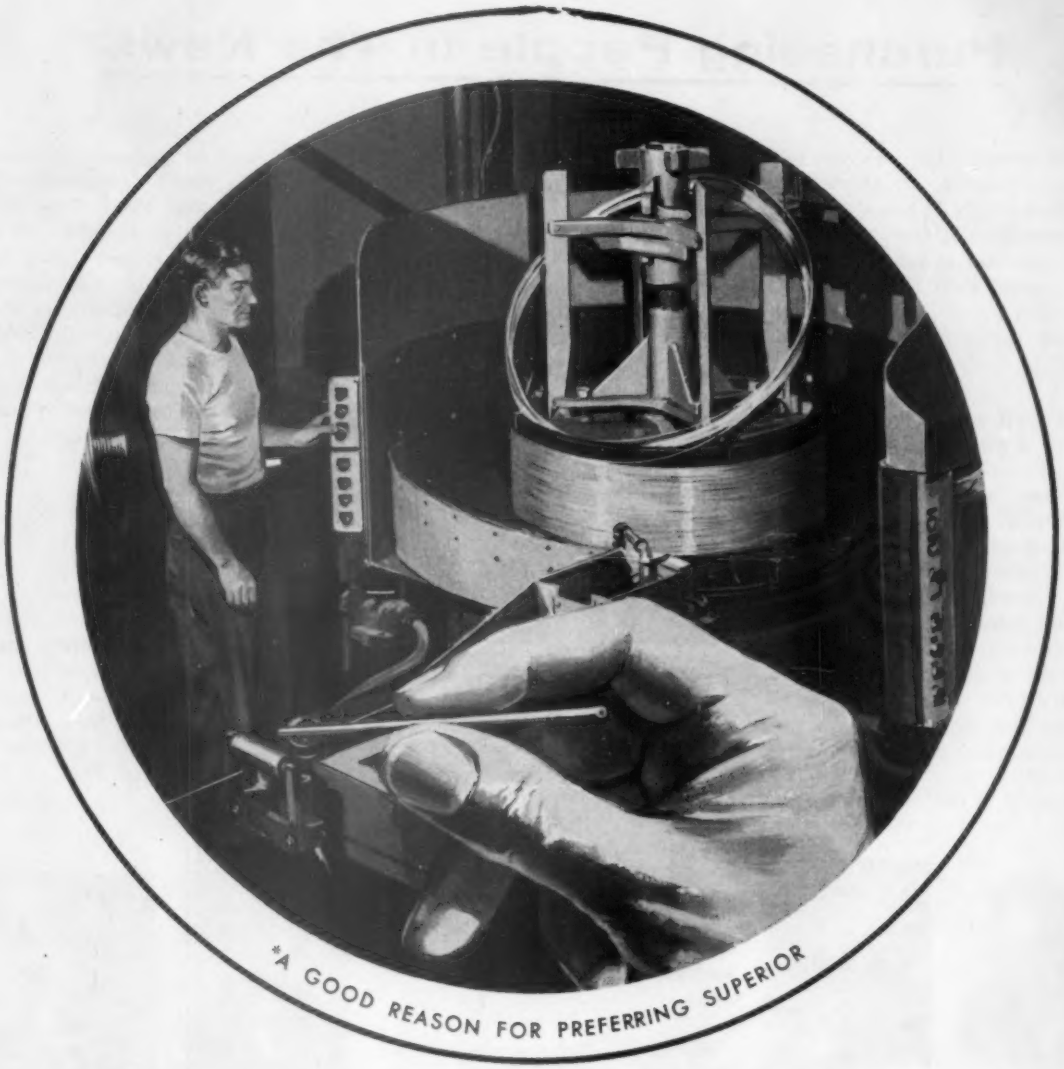
QUANTITY DISCOUNTS

There are two matters in connection with the article, "Don't Discount Quantity Discounts" (PURCHASING Magazine, Sept. 1, 1958) which I wish to bring to your attention. I have received letters from a number of your readers concerning these two points.

Throughout the article, and on the chart, I refer to a factor Sa. However, when the formula was presented in the magazine in bold face type, this factor was referred to as SA. This, apparently, has been a source of some confusion to readers. Also, in the last few lines of the article the two factors $\frac{Q}{2}$ and $\frac{q}{2}$ were marked with an asterisk. The article ended on page 104 with no footnote to explain the asterisk. If you will refer to the manuscript which I furnished, there is a paragraph which explains the asterisk.

E. S. Muller
Purchasing Agent
Naugatuck Chemical
Naugatuck, Conn.

• *To clear up the mystery of the asterisk: Here is the sentence where it was used, "I is the average delivered value of inventory under quantity buying, $\frac{Q}{2}$*" And here is the explanatory footnote, "This assumption is warranted since average inventory is assumed as the mean of the largest inventory and the smallest for an item. With close control the supply is nearly exhausted at the time of receiving a new shipment."*



New—capillary tubing in 3000 ft. lengths for industrial instrumentation

***Improved bore uniformity, broader size range, flow tested to your specifications**

To meet the demands of modern instrument design and automated fabrication, Superior is now offering seamless capillary tubing in lengths up to 3000 ft. It is available in nine different materials from select-quality raw stock, including stainless steel, carbon steel, nickel and nickel alloy.

Scrupulous care in manufacture results in a finished product that is bright and scalefree, with an extremely smooth, uniform bore. The tubing is easy to weld, braze or solder. ODs range up to 3/16 in.—IDs from .004 to .040 in. maximum.

When you order capillary tubing by Superior you are assured that your specifications will be met. In addition to 100% dimensional, pressure and finish inspections, we also can test lengths for flow rates with the latest equipment when specified. Rates can be varied from 5 to 3700 cc per min.

More information on Superior's improved capillary tubing products is yours for the asking. Send coupon today.

Superior Tube

The big name in small tubing

NORRISTOWN, PA.

All analyses .010 in. to 1/2 in. OD—certain analyses in light walls up to 2½ in. OD

West Coast: Pacific Tube Company, 5710 Smithway St., Los Angeles 22, Calif. RAymond 3-1331

SUPERIOR TUBE COMPANY
2034 Germantown Ave., Norristown, Pa.
Send me a copy of new Data Memorandum 11, on capillary tubing.

Name_____ Title_____

Company_____

Street_____

City_____ Zone____ State_____

For More Information Write No. 189 on Inquiry Card—Page 32

Purchasing People In The News

Electrocomp, Inc., Division of Blonder-Tongue Laboratories, Inc., Newark, N.J., has announced the promotion of **George Faccone** from expediter to buyer. Mr. Faccone started with Electrocomp in 1956, with previous experience in the purchasing field.

Two staff additions in the purchasing department of Diamond Alkali Company, Cleveland, Ohio have been announced here.

Henry T. Myers, a buyer and expediter at the company's Deer Park, Texas Plant since 1951, has been transferred to Diamond's national headquarters in Cleveland. Here he will be manager of the purchasing contract section, and will be responsible for all construction contracts. Mr. Myers is a graduate of Southwestern University.

Joseph J. Lint has joined the

Henry T. Myers

Joseph J. Lint

purchasing department as a staff assistant. In addition to assisting the manager of purchasing research in value analysis, he will also hold certain buying responsibilities in the department's equipment section. Mr. Lint has a B.B.A. in business and engineering from the University of Pittsburgh.

Ronald H. Ruehrwein is the new division purchasing agent for Archer-Daniels-Midland Company, Cincinnati, Ohio. He succeeds **Philip R. Moeller** who has resigned to accept the management of a family owned company. Mr. Ruehrwein has been assistant to Mr. Moeller.

R. J. Rucci has been appointed purchasing manager at Rohr Aircraft Corporation's main Chula Vista, California plant. Mr. Rucci

R. J. Rucci

will be in charge of all purchasing activities at that plant and, in addition, will supervise purchasing and warehouse functions at Rohr's Los Angeles Office. Previous to joining the company, he was with the Ford Motor Company and its allied divisions. He was most recently administration and planning manager, Los Angeles Plant 2, Lincoln-Mercury Division.

Richard J. Holzinger has joined the staff of Shell Development Company's Research Center at Emeryville, Calif., as assistant

Richard J. Holzinger

manager of the purchasing-stores department. Mr. Holzinger has replaced R. D. Huffman who is now in charge of the purchasing-stores activity at Shell Development's Exploration and Production Research Division at Houston, Tex. Mr. Holzinger joined Shell in Brooklyn in 1951. He transferred to the company's Norco, La. refinery as an expediter in 1952, and to St. Louis as a buyer two years later. He joined Shell Pipe Line Corp. in Midland, Texas last year and was purchasing-stores representative until his recent appointment.

Robert J. Baker has been named purchasing agent, and **Donald H. Kattman,** assistant purchasing agent, for the Niagara Falls plant and the Durez Plastics Division of Hooker Chemical Corporation, Niagara Falls, N.Y.

Mr. Baker, who had been as-

Robert J. Baker

D. H. Kattman

sistant purchasing agent since 1956, joined Hooker in 1938. He worked in the research department until 1941 when he entered military service. In 1946 he returned to Hooker, remaining in research until his transfer to the purchasing department as a buyer in 1952.

Mr. Kattman has been a buyer in the Hooker purchasing department since 1955 when he was transferred from the former Niagara Alkali Company following merger of that company into Hooker. He came to Niagara Alkali in 1946 as assistant purchasing agent.

For More Information Write No. 190 on Inquiry Card—Page 32→

PRIDE OF PRODUCT / *An American Tradition*

You put pride in your product...so does FROSTKRAFT. Our product is *packaging*. Any product that needs *kraft* deserves FROSTKRAFT.

CORRUGATED CONTAINERS

STANDARD AND SPECIALTY BAGS

MULTIWALL SHIPPING SACKS

OLIN MATHIESON CHEMICAL CORPORATION

FROSTKRAFT

Forest Products Division, West Monroe, La. • District Sales Offices: New York • Atlanta • Chicago • Dallas

FROSTKRAFT IS A TRADEMARK

if you buy
stampings
. . . look for the
PLUS
beyond
the PRICE! . . .

engineering
for instance

Each day, our engineers suggest slight changes which eliminate higher tooling costs or additional operations on our customers' stampings.

Usually this speeds delivery time . . . another *plus* which alone justifies most differences in original quoted prices!

On your next stamping requirement, look for this plus beyond the price . . . *engineering* . . . and let us see your prints before you buy!

DE-STA-CO *A brochure is yours for the asking!*

DETROIT STAMPING COMPANY
Established 1915
408 Midland Ave., Detroit, Mich.
"America's Leading Job Stamping Manufacturer"

Look to Detroit!

For More Information Write No. 191 on Inquiry Card—Page 32

FOB–"filosofy of buying"

YOU MAY have heard Thomas Hallowell, Jr.'s tart observation on some suppliers' quality standards, but it's worth repeating. Hallowell, president of Standard Pressed Steel Co., and of the American Standards Association said: "Some steel producers are said to have only one test; before shipping they cut off the end of a bar or sheet and drop it in a bucket of water. If it sinks, they ship the steel. And with rush orders they just leave out the water. It hits the bottom faster and they can ship faster."

• •

A CLOCK manufacturer recently began packing alarm clocks in cans for shipment to food stores, according to the American Iron and Steel Institute. The cans are said to protect the clocks from breakage during handling. Now if some clever packaging buyer can come up with an idea for encapsulating the wretched things in hard, clear plastic we can all get a little more sleep.

• •

"You're the Purchasing Agent? From the sound of your voice on the phone I expected a much heavier man."

COLLEGE P.A. we know told us about the highly successful industrial sales manager who retired and built himself an imposing house on a hill overlooking the campus of a small New England school. Faculty members now refer to it as "Overbearing Manor."

• •

A LEADING economist, well-known to N.A.P.A. audiences, sort of scared us with a cryptic comment the other day. We exchanged greetings on the subway. "How're things going?", he asked. "Fine. Business seems to be getting pretty good," we answered. "*Too* good in some quarters", he replied darkly and hurried off towards the shuttle.

• •

OOPS! Vic Quam, chief deputy, County of Los Angeles Purchasing and Stores Department, sent us back an article from our July 21. He had underlined the lead which read, "We don't buy like a government agency . . . says Jack Launer, director of purchases . . . etc. Vic wrote only three words in the note accompanying the article: "This really hurts."

It hurts us more, Vic, that the remark gives the impression that we as a publication look down on governmental purchasing. We only meant to quote somebody, without editorially endorsing his sentiments. Our own feelings were clearly expressed in the well-known article on governmental purchasing—"The Truth About Military Buying"—that appeared in the October, 1957 issue. It was widely acclaimed by both goernmental and industrial purchasing executives as a fair analysis of governmental buying and a defense of some of its least understood practices.

METAPHORS—conscious and uncounscious—ran wild in a recent item from a local N.A.P.A. magazine: "The association has a a new public relations man at the *wheel* and right off they gave him a *whale* of a job. He is the chairman of the arrangements committee for the September workshop. Congratulations and welcome to the *fold*, Fuller *Lamb*!"

• •

OMINOUS NOTE: The advertising Trades Institute believes that suppliers of advertising materials and services can "definitely increase their sales volume" by offering trading stamps redeemable in merchandise to their clients.

Aren't trading stamps in essence a "rebate" on suppliers' legitimate prices, the A.T.I. was asked. The answer: "In a business as competitive as the advertising essentials field, prices are determined by value offered. The small edge offered suppliers giving stamps over those who do not would have small relationship to the over-all quotations on jobs. The stamp plan offers a nice way to say 'thank you' for appreciated business. But it cannot seriously influence price considerations on the part of the buyer."

Then why give them?

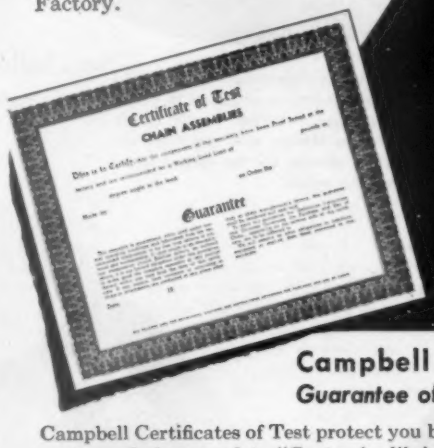
• •

"I don't think Miss Wilson understands the true nature of her duties!"

Campbell "Customized" Sling Chains

PUT THE ASSEMBLY YOU NEED "YESTERDAY" ON THE JOB TODAY!

Now, the new Campbell "Customized" Sling Chain Assembly Program gives you sling chains as you want them . . . when you want them. Here's how this fast, flexible service works for you. You can: a) Maintain your own stock of Campbell component parts; and assemble slings right on-the-job; b) get immediate delivery on assemblies and components from your Campbell Distributor; c) get immediate shipment ordered through your Campbell Distributor on slings made-up at the nearest Campbell Warehouse or Factory.


Certificate of Test
CHAIN ASSEMBLIES
Guarantee

Campbell Certificate of Test:
Guarantee of Performance

Campbell Certificates of Test protect you both for Campbell component parts, and the complete "Customized" Assemblies you get from your Campbell Chain Distributor or Warehouse. Call your Distributor for details on how the Program meets the requirements of *your* operation.

SEND TODAY for your free copy of Campbell's "Customized" Sling Chain Brochure No. CSA-1.

CAMPBELL CHAIN

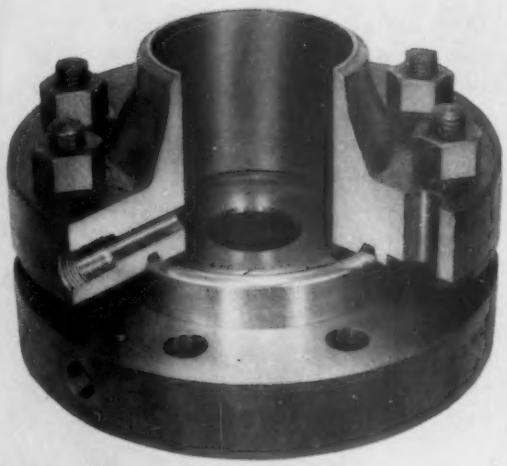
CAMPBELL CHAIN *Company*
York, Pa.—W. Burlington, Iowa
E. Cambridge, Mass.—Seattle, Wash.—Portland, Ore.
Sacramento, San Francisco, Los Angeles, Calif.

For More Information Write No. 192 on Inquiry Card—Page 32
For more Information Write No. 193 on Inquiry Card—Page 32→

Traditionally dependable

TAYLOR

The Taylor Forge line of Welding Fittings is truly complete, embracing every size, type, thickness and material for any service condition.



Because extreme dimensional accuracy of the assembled union is required in order to assure precise metering, Taylor Forge Orifice Flange Unions are specified for this exacting service by the larger users throughout the world.

Forged and fabricated booster nozzle assembly for guided missile. Both hammer and press forging methods are used in producing this part.

Spiral-Weld Pipe, our original product, (first made as spiral riveted pipe nearly 60 years ago), remains to this day a major item and its use continues to expand. Its money-saving features are widely recognized in many services.

Electric Fusion Welded Pipe is made in sizes from 14" OD to 96" OD with wall thicknesses to 1.531", and in a variety of materials, including stainless and alloy steels.

in many different fields

FORGE Welding Fittings and Forged Flanges

FORGED, ROLLED AND EXTRUDED PRODUCTS IN CARBON AND ALLOY STEELS, STAINLESS STEEL and all other ferrous and non-ferrous metals

Wherever piping is important—as in power, processing, gas transmission and distribution, heating, air conditioning and many other fields—Taylor Forge is recognized as the leading manufacturer of highest quality *Welding Fittings* and *Forged Flanges* of every size, type and wall thickness or pressure standard.

Many other types of forged, rolled and extruded products help make Taylor Forge depended upon in many different fields throughout industry. One thing all have in common is the dependability, the integrity that has always been associated with the name TAYLOR FORGE.

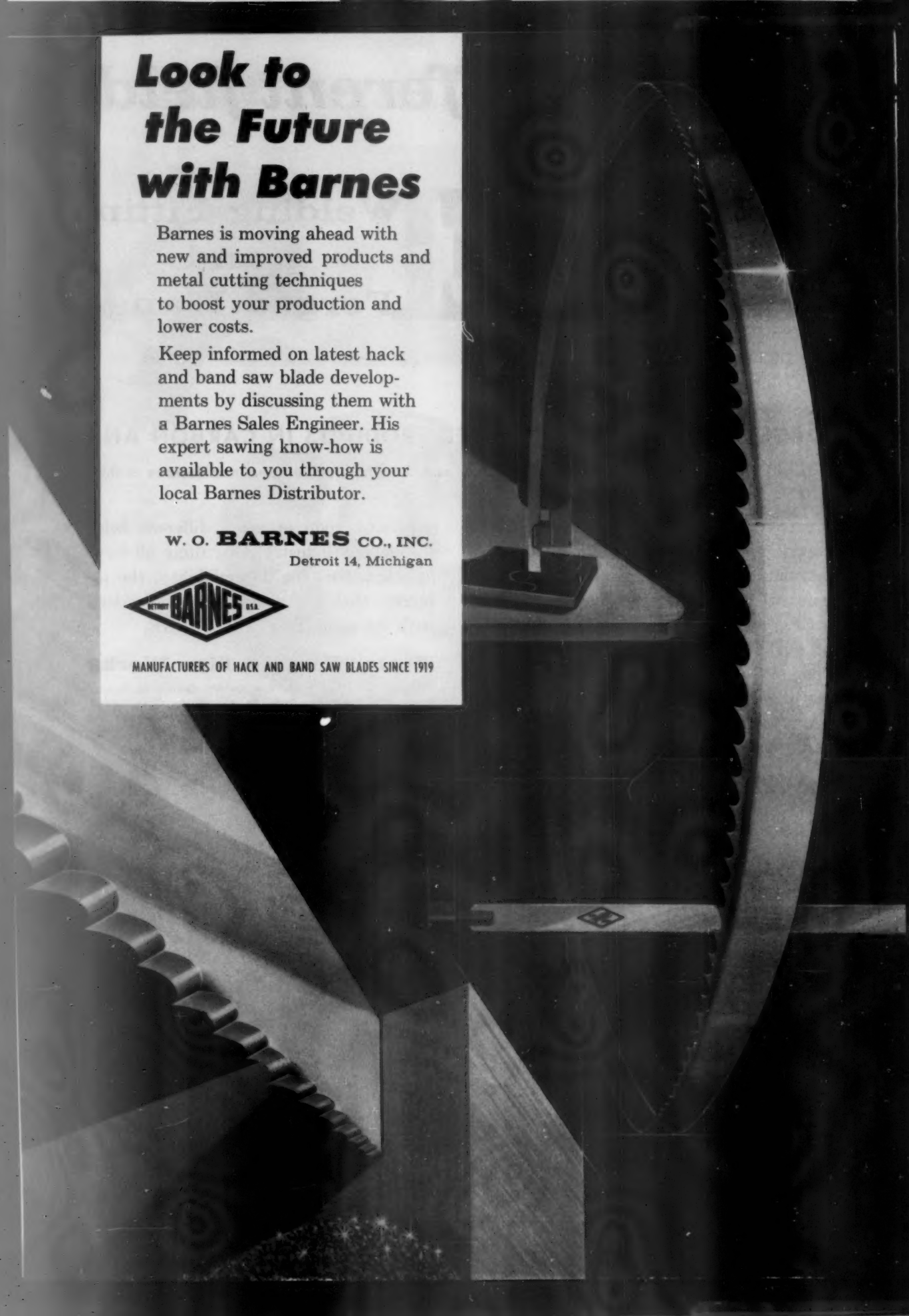
Taylor Forge & Pipe Works

General Offices and Works: P.O. Box 485, Chicago 90, Illinois
Plants at: Carnegie, Pa.; Somerville, New Jersey; Gary, Indiana; Houston, Texas; Fontana, Calif.; Hamilton, Ont., Canada

District Sales Offices: New York, Boston, Philadelphia, Pittsburgh, Atlanta, Chicago, Houston, Tulsa, Los Angeles, San Francisco, Seattle, Toronto, Calgary, Montreal.

Taylor Forge was America's first and is still the country's foremost manufacturer of Welding Necks, Nozzles, Large Diameter Flanges and similar boiler, heat exchanger and other pressure vessel components. Such parts are made in any size and material for any service condition.

This Gas Pipeline Combination Valve Setting and River Crossing Header with integral venturi reduction is typical of the many different forged headers with contoured outlets produced by Taylor Forge for the petroleum processing and gas transmission industries.



Look to the Future with Barnes

Barnes is moving ahead with new and improved products and metal cutting techniques to boost your production and lower costs.

Keep informed on latest hack and band saw blade developments by discussing them with a Barnes Sales Engineer. His expert sawing know-how is available to you through your local Barnes Distributor.

W. O. **BARNES** CO., INC.
Detroit 14, Michigan

DETROIT BARNES U.S.A.

MANUFACTURERS OF HACK AND BAND SAW BLADES SINCE 1919

Highlights of This Issue

√ Is Purchasing Doing Its Job?

Theme of this issue is one of the hottest subjects of the day among P.A.'s—measuring performance. Some say it can't be done, some say it can, some say what difference does it make anyway? Well, it does make a difference. Management is definitely seeking ways to evaluate purchasing efficiency and you'll hear a lot more about it from now on. Two articles will help you evaluate some of the methods that are highly touted as means of evaluating you: "How to Measure Purchasing Performance" on page 59 and "Cost-per-Order: Can a Clerical Concept Be Applied to a Profit-Making Job" on page 65.

In addition, results of the Purchasing Opinion Poll on page 15 throw some interesting light on what several hundred of your fellow purchasing agents are thinking and doing about the subject.

Related articles include one on a simple way to measure purchasing efficiency (page 62) and a more specialized one dealing with buyer performance standards for individual purchase orders (page 68).

√ I Can Get It for You Wholesale

Many a P.A. finds himself today in the position of a pushcart peddler in an Oriental bazaar. He spends a lot of time and effort trying to get discounts on personal purchases for Lazy Lizzie the boss's secretary and Ferocious Freddie the foreman only to have them bounce back on him. "You only got me a 47¼% reduction on this plastic shower curtain and I just saw the same thing at Krumbun's Discount House around the corner at 47½%," she screams. "Take it back!" For some outspoken comment on the personal purchase plague, see the editorial on page 57. It may prove to be just the thing to back up your demand that you be relieved of one of purchasing's unpleasant and unprofitable jobs.

√ It Can be Stamped Out

Even if you've been buying stampings by the millions, you'll find "What the P.A. should Know About Stampings" on page 70 an excellent "refresher course." For P.A.'s who know little or nothing about stampings, the article spells out some of the important cost-reduction potentials of this basic process.

←For More Information Write No. 194 on Inquiry Card—Page 32

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Steel Containers

- *Positive protection*
- *Superior lithography*
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- *Top quality*
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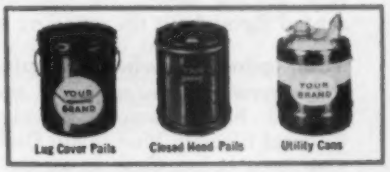
- *Full line of pouring spouts*
- *Famous Continental service*

Call Continental when you need steel containers. Get top quality plus outstanding Continental service. Engineering and research assistance available to help you solve any packaging problem.



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For More Information Write No. 195 on Inquiry Card—Page 32

NOW AVAILABLE IN GRINDING WHEELS
FROM YOUR REGULAR SUPPLIER!

G-E MAN-MADE DIAMONDS

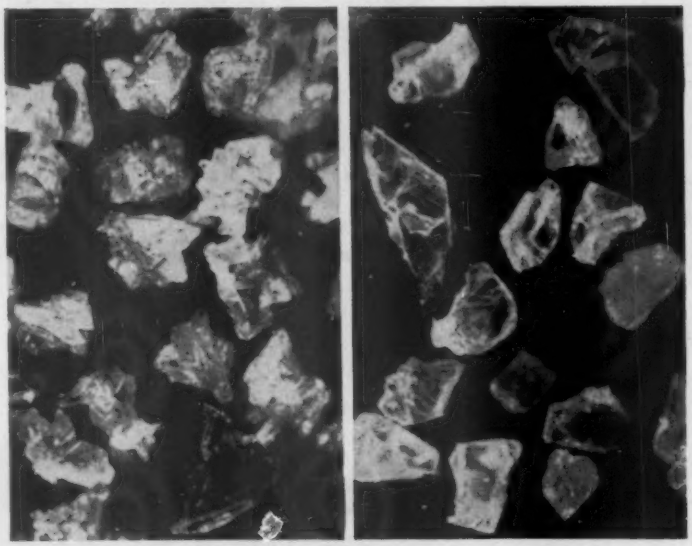
Now proved in production use... out-perform natural diamonds in the majority of carbide grinding operations!

Now cost-conscious manufacturers have proved what laboratory and field tests had already indicated; in actual production use, resinoid or vitrified-bond wheels with General Electric Man-Made industrial diamonds had at least 15% and up to 75% higher efficiency in most carbide grinding applications than wheels with natural diamonds.

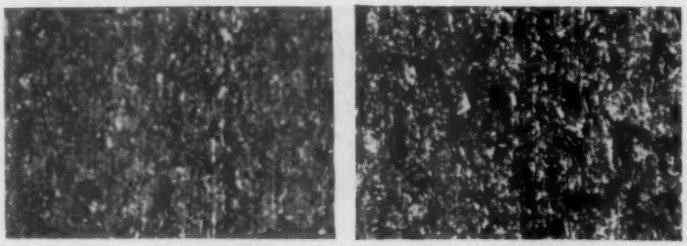
Production experience shows that wheels with G-E Man-Made Diamonds remove more carbide, with less wheel wear and with 20-35% less power consumption. They maintain sharper cutting edges; cut more freely; produce surface finishes that are as good, or better, than those obtained with natural diamonds. The result: A considerable reduction in production costs.

Man-Made Diamonds are better, because, while their chemical properties are the same as those of natural diamonds, their crystal shape is importantly different. Man-Made Diamond crystals are more blocky and rough surfaced. This provides extra support in the bond – makes them stay in the wheel till more completely used up—minimizes the waste of lost diamonds. They are also more friable, so that sharp, new cutting edges are constantly presented throughout the grinding operation.

Your grinding-wheel supplier offers them now. If you're using resinoid or vitrified-bond diamond wheels, specify General Electric Man-Made Diamonds in your next order. Cash in on the superior performance that's already cutting costs for other manufacturers! *Metallurgical Products Department, 11143 E. 8 Mile Ave., Detroit 32, Michigan.*



Man-Made Diamond Crystals (left) are rough and blocky; natural crystals (right) are smooth. General Electric Man-Made Diamonds stay bonded longer, cut more freely, take 20-35% less power.



Close-ups of worn grinding wheel faces show that, after use, a wheel made with General Electric Man-Made Diamonds (left) invariably shows considerably fewer voids where crystals have become dislodged than does a wheel with natural diamonds (right). Man-Made Diamonds tend to remain in the bond longer and continue to do an efficient cutting job until almost completely used up.

Progress Is Our Most Important Product

GENERAL ELECTRIC

For More Information Write No. 196 on Inquiry Card—Page 32

Personal Purchases

THIS is the time of year when the purchasing agent is likely to get a telephone requisition from the Big Boss's secretary—"Two tickets on the 50 yard line for tomorrow's Big Game. They claim they're sold out, but B. J. says you'll know where to pick them up. That's your business."

Well, since it's the Big Boss who is asking, and it's a chance to prove your procurement skill, you'll probably drop everything else and get them—perhaps not on the 50 yard line, but close.

The Big Boss will probably never know about the scalper's premium that would have made it just as easy for him to get the tickets himself, or the company business that went by default to gratify his personal request, or the midnight oil that was burned to make up for the lost time. If he did, he would join with you in a statement of policy—"The Purchasing Department works for the company. No personal purchases."

For this trivial example is but a minor phase of a major problem that arises whenever Tom, Dick, and Harry come around looking for anything from a tire to a complete automobile, arguing "You can get it for me wholesale."

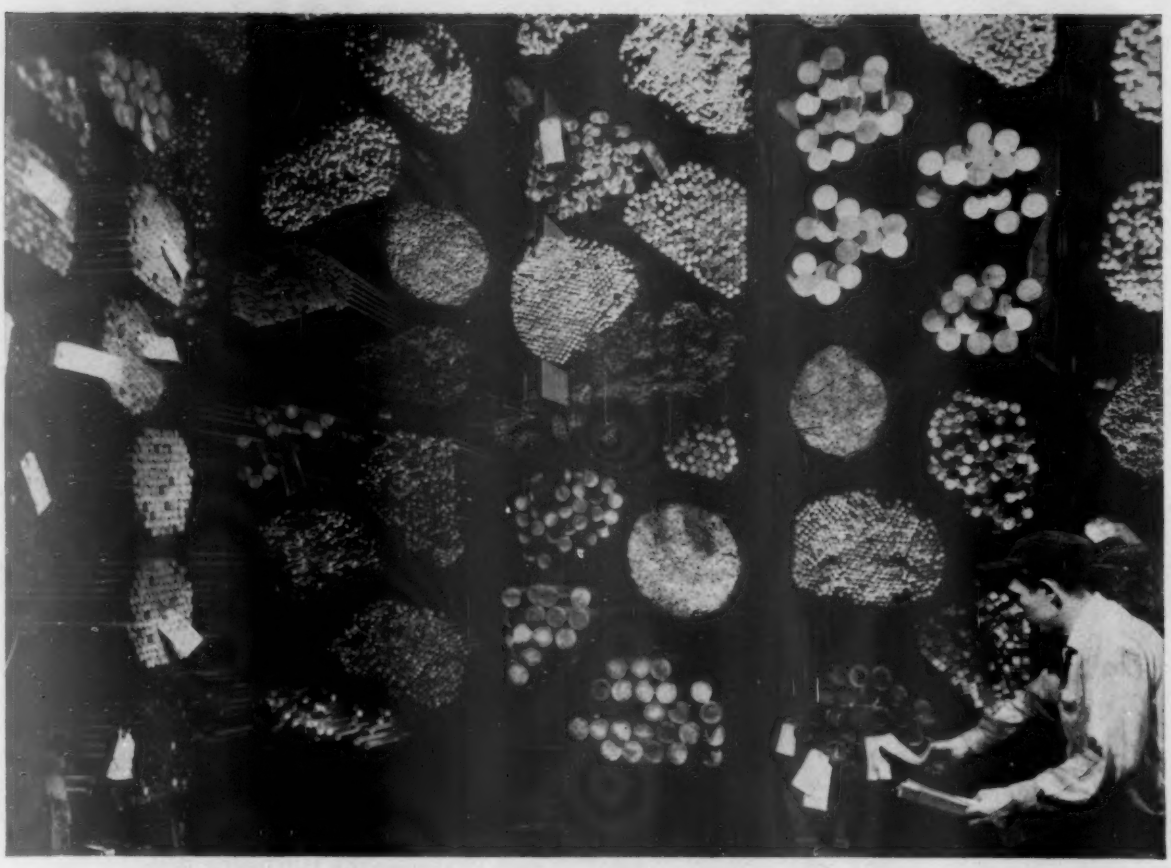
You can argue that it's a misuse of the company's purchasing position; the personnel manager counters by saying that it improves employee relations. You point out that it takes time and paperwork to fill even a simple request, but a service charge is unthinkable. "The company wants to make a profit on doing just a little favor." And what happens if the tire blows or the wife doesn't like the color of the upholstery? You're a heel, and the purchasing department doesn't know its business.

Ask the sales manager how his distributors would like it if they were by-passed by similar requests. They have to be protected. That shoe is on the other foot.

There's just one sound way of handling personal purchases through the purchasing department. Don't make them. That's not what purchasing departments are for.

So what about the salesman with an order hanging in the balance, who calls up to tell you, "I've got some good tickets for the Big Game tomorrow. Bring the wife along, and we'll have a spot of dinner afterwards." That's a different problem, and you know the answer to that one too.

Stuart F. Heinritz



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☑ ***Reliability.*** Year in and year out your most reliable source for cold finished bars is Ryerson. Call today. Prompt, personal service from experienced steel men proves that Ryerson service saves you time and money on your order for a few bars—or a truckload.

Widest size range always on hand, even including hard-to-get intermediate sizes.

Shafting stock receives special care to insure protection of finish and straightness.

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For More Information Write No. 197 on Inquiry Card—Page 32

How to Measure Purchasing Performance

No one has yet figured a sure-fire way to measure purchasing performance. But a lot more progress has been made than most managements and purchasing executives realize.

By Dean Ammer

EVERY PURCHASING executive would like to have better measures of purchasing performance. The N. A. P. A. even has a special committee studying the subject. Big corporations like General Electric have staff specialists working full time on developing new techniques to measure purchasing performance.

It should be easy to measure purchasing performance. There are really just four basic steps:

(1) Define the limits of the purchasing job.

(2) Determine the desired objectives to be achieved within these limits.

(3) Develop a program to meet the objectives.

(4) Compare progress on the program with objectives.

Unfortunately, it is far from easy to put these relatively simple theoretical principles into practice. Many P. A.'s, in fact, stumble and fall down on step No. 1—defining the limits of the purchasing function. And often it isn't their fault either. The fact is, if management is unwilling to clearly define the scope of the purchasing job, it will never be possible to measure purchasing performance.

This doesn't mean management must take the initiative in defining the purchasing function. The purchasing executive can do the job himself; but, of course, it is essential that top management back his proposals.

Some purchasing departments use their policy and procedure manuals as a vehicle. In them, they carefully define the limits of responsibility not only of the over-

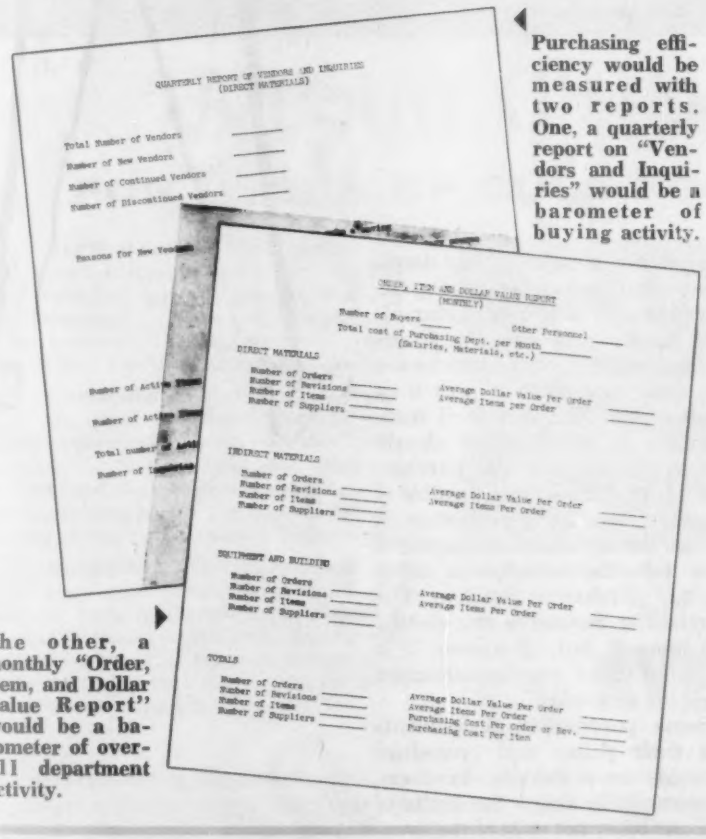
Measuring Purchasing Performance in the Small Company

Only big companies can afford elaborate statistical techniques to measure purchasing performance. G. J. Butler, purchasing agent of Macon Arms, Inc., Decatur, Ill., suggests an easier way. "First," says Mr. Butler, "we must distinguish between purchasing proficiency and purchasing efficiency." Butler defines proficiency as "the ability of the buyer to obtain the very best price for adequate goods or services." Efficiency, on the other hand, is concerned with the operation of the purchasing department.

PRICE PERFORMANCE REPORT
(DIRECT MATERIALS)

PART NO.	NAME AND CLASSIFICATION	ACTUAL PRICE			TARGET PRICE					
		PREVIOUS PRICE	PRESENT PRICE	INCR. OR DECR. PRESENT TO PREV. PRICE (DOLLARS)	PREVIOUS	AVER. OF	PRESENT	AVER. OF	INCR. OR DECR. PREV. TARGET TO PRESENT (DOLLARS)	COMPARISON ACTUAL CHANGE TO TARGET CHANGE. GAIN OR LOSS. (DOLLARS)
6109	Charging Tube Fitting (Screw Mach.)	.29 Ea.	.235 Ea.	.055 Decr.	.292 Ea.	4	.279 Ea.	7	.013 Decr.	.042 Gain
6001	Black Paint	.43 Gal.	.45 Gal.	.02 Incr.	.523 Gal.	3	.747 Gal.	6	.224 Incr.	.204 Gain

Butler proposes that purchasing proficiency be measured with a report that compares actual prices paid with target prices. The target prices are computed by averaging quotations or prices paid on previous purchases. Performance would be measured by taking the difference between the actual change in price with the change in target price as illustrated in the example.



Purchasing efficiency would be measured with two reports. One, a quarterly report on "Vendors and Inquiries" would be a barometer of buying activity.

The other, a monthly "Order, Item, and Dollar Value Report" would be a barometer of over-all department activity.

all purchasing department but of each element in it. For example, the Raytheon purchasing manual defines over-all departmental responsibility this way: **"the responsibility for conducting and concluding negotiations affecting purchases, price, deliveries, and terms rests with the purchasing departments."** The manual then goes on to define purchasing's special duties and establish principles to guide its relations with other departments.

Clear Objectives Help

The next step is measuring purchasing performance is to determine the objectives that are to be achieved within the defined limits of a departmental job. Almost every P. A. knows what these objectives are—low prices, high inventory turnover, etc.—but very few bother to write them down. Nevertheless, it pays to put them in writing and make them part of the policy manual. There are two reasons for this. First and most important, if objectives are spelled out in writing there is no confusion as to what they are, either in purchasing or in other departments. Second, the process of writing them out can often stimulate thinking on ways to achieve them efficiently.

Every purchasing department doesn't have the same objectives by any means. And different purchasing departments attach varying importance to identical objectives. The objectives of a department and their relative importance are determined both by the limits of the department's activities and the company's over-all activities. Objectives also vary in importance during the business cycle. At one stage high inventory turnover might be the purchasing department's single most important objective. A few month's later the emphasis might be on cost reduction; at this time it will be proper for purchasing to go so far as to increase inventories slightly provided this will bring lower prices.

Typical Objectives

One medium-sized metalworking company lists ten different objectives in its purchasing policy manual. They are:

No Substitute for Boss's Judgment

Karl Wolf, purchasing agent at Westinghouse's Air Conditioning Division in Staunton, Va. believes that most objective measures of purchasing performance are useful — but shouldn't be taken too seriously. Wolf believes there is no real substitute for the boss' judgment. He declares that "until the purchasing agent becomes an administrator, not an office manager, and until he becomes a member of management by his own value not by appointment, having a good grade on a so-called measurement basis will do nothing for him except to illustrate his naivete." He believes the P. A. should be "wary of any panacea offering quick recognition." There are few non-clerical functions where performance can be measured so accurately that salaries can be made commensurate with some standard of performance. With purchasing, there is just no substitute for the boss's judgment.

P. A. Karl Wolf: *"Measurements are good but it's nice to have a boss who is familiar with your problems."*

(1) Low prices for purchased materials and services.

(2) High inventory turnover.

(3) More-than-adequate quality of purchased materials and services.

(4) Delivery of purchased materials in sufficient time to insure uninterrupted operation of production lines.

(5) Good records.

(6) Favorable relations with supply sources.

(7) Low cost of acquisition and possession of material. (This department is responsible for both the receiving department and store room.)

(8) Low payroll costs.

(9) Development of qualified purchasing personnel.

(10) Sound policies on reciprocity.

Note how the above objectives are inter-related. Maximum achievement of any one objective brings sacrifices in other objectives. For example, the buyer that concentrates on low prices as a sole objective will inevitably reduce inventory turnover by buying in larger quantities to take advantage of quantity discounts. He will also make sacrifices in quality and delivery by buying from marginal suppliers who quote rock-bottom prices but are forced to "cut corners" on quality or service in order to make a profit. The buyer in an all-out objective to achieve minimum prices may also jeopardize the objective of good supplier relations by being too price conscious.

The fact is, achievement of any one objective brings sacrifices in the achievement of other purchasing objectives. This is even true with an objective like the training and development of qualified purchasing personnel. Money spent on training and developing personnel certainly will prevent maximum achievement of the objective of low payroll costs and it may affect other objectives.

If objectives were inter-related, the job of purchasing management would be an easy one. All the P. A. would have to do would be to establish the "ground rules" and everything would take care of itself. Instead, the P. A. must constantly be evaluating the relative importance of his various objectives and re-directing the emphasis given each in his department. This, of course, is the major reason it is hard to measure purchasing performance. Purchasing is a job requiring considerable judgment; it takes judgment to evaluate it.

This does not mean there aren't many sound barometers that can provide extremely useful information about the quality of the purchasing job that is being performed. There are mechanical techniques for measuring achievement of most of the typical purchasing objectives we have listed. The more commonly used techniques include materials and personnel budgets, price indexes, tabulations of vendor quality and delivery performance, cost reduction reports, internal audits, and various status reports. Let us now discuss some of these techniques in detail.

The Budget. This is one of the most commonly used techniques to measure purchasing performance. In one form or another, nearly half of the industrial purchasing departments control administrative and material costs with budgets.

The administrative budget is the more common of the two. It can be used to measure the achievement of the objective of low payroll costs. Usually the purchasing manager makes up his budget on an annual basis. With

(Please turn to page 90)

For other P. A.'s ideas on purchasing performance, don't miss the Purchasing Opinion poll on page 15 of this issue.

A Simple Way to Measure

Here's how the Atomic Energy Commission measures the efficiency of the multi-million dollar procurement activities of its contractors. The program can easily—and profitably—be adapted by industry.

HOW DO you measure the efficiency of a purchasing department? That's a question many purchasing executives have pondered. While all agree that a method of measurement is needed, there's not much agreement on how to get it.

In most companies, purchasing efficiency is measured solely by "human evaluation." A few others rely on statistical measurements.

Human evaluation proponents claim that statistical measurements require too much interpretation. The other side argues that statistical measurements eliminate guess work and personal prejudices.

Probably the most realistic approach is a combination of both. This is the method employed by the New York Office of the Atomic Energy Commission. Their evaluation program is used to appraise the multi-million dollar procurement activities of contractors performing work for the AEC. The basic elements of the program can be used by any purchasing department to evaluate its own efficiency.

Says Alice Hodnett, chief of the procurement and traffic branch at the New York Operation Office: "We use a statistical evaluation program to back up human evaluation. Our statistical program is simple and practical. The purchasing agent is measured only on factors he can control, and the results provide a basis of comparison."

The AEC program statistically appraises three areas of procurement activity:

- Adherence to policy and procedure
- Utilization of purchasing personnel
- Price performance

Here's how the program works:

Adherence to procedure. This is determined by studying a cross section of purchase orders and supporting documents for procedural infractions. A chart (see illustration) is used to assign arbitrary weights to common infractions. (The higher the number, the more serious the infraction.) The weights are totaled and adjusted to a per-hundred-order

Utilization of Purchasing Personnel

Month	Number Workdays	Number Persons	Purchasing Man-Hours	Number Purchase Transactions	Average Man-Hours per Purchase Transaction Processed
1956					
July	21	23	3864	1657	2.33
Aug.	23	22	4048	1561	2.59
Sep.	19	21	3192	1360	2.35
Oct.	23	22	4048	1629	2.48
Nov.	20	21	3360	1559	2.15
Dec.	19	21	3192	1486	2.15
1957					
Jan.	22	22	3872	1924	2.01
Feb.	19	22	3344	1812	1.84
Mar.	21	22	3696	1961	1.88
Apr.	22	22	3872	1956	1.98
May	22	22	3872	1849	2.09
June	20	22	3520	1784	1.97
July	22	21	4596	1974	2.33
Aug.	22	21	4596	1744	2.63
Sep.	20	20	3200	1523	2.10
Oct.	23	20	3680	1717	2.14
Nov.	19	19	2888	1632	1.77
Dec.	21	19	3192	1654	1.93

Here are the results of a manhour utilization study made by the AEC. It relates monthly manhours of purchasing personnel to the number of purchasing transactions completed.

Purchasing Efficiency

basis. This figure is then deducted from 100 (theoretical perfection). The result is the rating for this phase of the evaluation.

For example, if 200 orders are examined and found to have procedural infractions whose weights add up to 4.5, the grade would be determined this way:

Total number of orders examined	200
Numbered weight of procedural infractions	4.5
Equivalent weight per 100 orders	2.25
Rating equals 100 minus 2.25 or	97.75

"This rating," says Miss Hodnett, "can be compared to a purchasing agent's past performance and to the performance of other purchasing agents."

Miss Hodnett points out that her office is concerned not only with ratings, but with the types of infractions found. "We want to know," she says, "if a procedure is being ignored, or if it just isn't suitable."

Utilization of purchasing personnel. Personnel efficiency is measured by the manhours required per purchase transaction. This is determined by dividing the total manhours used to process purchase orders in a one month period by the number of purchase orders processed. The result is the manhour utilization figure. (Manhours used to process purchase orders include manhours

AEC's Alice Hodnett: "In measuring purchasing efficiency, we use a statistical evaluation program to back up human evaluation."

Price Performance

Purchase Order No.	Item	Price Paid	Test Price
64149	Wire, Thermocouple	$ .145/ft. less 10%	Same
40273 (Blanket)	Diode, Crystal	$ 1.34/each	1.10
92475	Blades, Hacksaw, Molybdenum	$47.64/C	42.60/C
52516	Bottle, Polyethylene	$21.00/gross	14.40/gr. 56.80/M
27049	Argon	$35.00/cyl.	Same
62108	Acetone	.45/lb.	Same
39984	Grease	$14.80/oz.	Same
74614	Tubing, Rubber	$ 7.30/C. ft.	10.00/C. ft.

This table gives the results of a price performance study made by the AEC. It shows how check prices on certain items compare with prices actually paid for the items.

expended from the time the requisition is received until the purchase order is issued and filed.)

Too Many or Too Few

"The manhour utilization figure serves many useful purposes," says Miss Hodnett. "If the figure is high, there may be too many people in the purchasing department, or their efficiency may not be up to standard. A low figure combined with sub-standard performance in adherence to procedure would indicate insufficient personnel. The manhour utilization figure also can be used to forecast staffing requirements."

Additional information is developed to aid in analyzing the manhour figure. This includes the ratio of requisitions received to purchase orders issued during the period under review, the backlog of requisitions in process, an estimate of the average number of items per purchase order, and a breakdown of orders into dollar categories.

In addition, the AEC sometimes makes a manhour utilization breakdown between supervisory, buyers, and clerical employees.

"The clerical time required to process a purchase order doesn't seem to vary between contractors," says Miss Hodnett. "However," she points out, "supervisory and buying time vary considerably."

Price performance. The objective here is to see if the purchasing agent is getting reasonable prices on routine purchases. To do this, purchases are selected at random from among items having a high use rate or high unit cost. Comparative prices are then obtained on these items, duplicating as far as possible conditions prevailing during the contractor's purchase, or a check is made against established commodity price indices.

"A purchasing agent may be following the book to the letter in his purchasing operation and have good personnel utilization," explains Miss Hodnett. "But at the same time, he may be paying too much. He may not be buying in economical quantities or getting discounts. A check of prices may indicate that the purchasing agent is lax in testing the market, or that he just isn't aware of more economical sources."

For comparison purposes, a percentage figure is developed. This relates the difference between the prices paid by the purchasing agent on the items tested and the check prices obtained.

The Creative Side

"The results of this evaluation give a good overall picture of a purchasing agent's department," says Miss Hodnett. "However," she cautions, "the statistical measurements do not reflect the creative efforts of the purchasing agent. This may be evidenced by his influence over procurement policy, his judgment in value analysis, and his ingenuity in effecting savings. Accomplishments in these areas lend perspective to the results of the statistical data and must also be recognized."

Adherence to Policy and Procedure

	WEIGHT
JUSTIFICATION:	
1. Basis of Award not evident	1.0
2. Basis of Award inadequately stated	.5
3. Basis of Award incorrectly stated	.5
DOCUMENTATION:	
4. All supporting documentation missing	1.0
5. Documentation incomplete	.5
6. Documents misfiled	.5
7. Documents not properly signed	.1
8. Cross reference missing	.2
9. Approvals not evident	.6
APPROVALS:	
10. AEC approval required—not obtained	1.0
11. Other approval required—not obtained	1.0
FORM OF SOLICITATION AND BIDDING:	
12. Verbal—should be written	.5
13. Should be formal	.5
COMPETITION:	
14. Insufficient number of bids	1.0
15. Bids not competitive	1.0
DELIVERY:	
16. Premium Price for delivery—not received	.8
17. Pick-up used when Job Site specified	.8
18. Violation of F.O.B. Policy	1.0
19. Award for delivery-file does not reflect delivery requirement	1.0
GENERAL:	
20. Source specified by Requisitioner—not adequately justified	1.0
21. Purchasing done outside regular channels	1.0
22. Error possibly prejudicial to other bidders	1.0
23. Purchase order used in lieu of Equipment Rental Agreement or Subcontract	1.0
24. Purchase order not consolidated	.5
25. Escalation paid without vendor justification	.5
26. Minor Procedural Fault (a) Vendor confirmations not in file	.2
27. Oversight or error increasing cost of purchase	1.0
28. Specification vague	1.0
29. Requisition not properly authorized	.5
30. No evidence of effort to develop additional source(s) for specialized items	1.0

This chart is used to evaluate how well a purchasing department adheres to AEC buying procedure. It assigns arbitrary weights to common procedural infractions.

Many accountants and a few purchasing executives annually go through an elaborate ritual of computing the purchasing department's cost-per-order. Is it really worth the effort?

Cost-per-Order: Can a Clerical Concept be Applied To a Profitmaking Job?

HAVE YOU ever gotten a report from your controller showing that it cost $5.23 (or some other such figure) to issue a purchase order? If you have, don't pay any attention to it. It probably isn't too significant whether the figure is $5.23 or $52.30.

You can't conclude that a purchasing department is efficient or inefficient from the usual cost-per-order figures. Such figures are basically artificial averages of a lot of costs. Also, they include fixed costs which don't vary with the volume of orders issued. For example, if your purchase order volume drops from 100 orders per week to 99, your internal costs won't drop by anything like $5.23 or $52.30. You'll be lucky if they drop by $.0523. The reason for this is simple, of course. With slight changes in volume of orders issued, you won't be able to make any changes in the amount of help you have. Consequently, there'll be little reduction in cost.

A Meaningless Measure

Why do so many otherwise-intelligent purchasing people make a big deal out of cost per order if it doesn't mean anything? One reason is because almost everyone else in management accepts such figures as being significant and useful. So purchasing has got to be able to talk cost-per-order in self-defense. Also everyone likes simple easy-to-understand tools of measurement. Cost-per-order looks like a nice easy way to evaluate purchasing efficiency without getting into messy details.

With cost-per-order figures you don't have to know anything about a purchasing department's function to reach rather dogmatic conclusions as to its efficiency. The higher the cost-per-order, the less efficient the department. That's all there is to it. And, let's face it, an inefficient PA can hide behind his low cost-per-order and use it as a shield against the much greater amount he's losing with sloppy buying practices. Thus, cost-per-order can become a crutch. And, if you're trying to analyze the operations of an activity you know little or nothing about, it's a good one. What more convenient approach than to divide the volume of paperwork by the total cost of operation and then pretend you've got a magic figure with special significance?

How to Figure It

You can't really grasp how unreal cost-per-order figures are until you know how they're figured. There's no one right way to calculate them. Two good accountants starting with the same basic data can come up with entirely different answers. And neither one of them will have made a

"I'VE MANAGED TO REDUCE MY COST-PER-ORDER 88% BY CHANGING MY WORK FORCE."

single mistake. Their answers depend upon what costs they take into account and how they allocate what accountants call "joint costs." Because accounting methods vary so widely, you can't ordinarily use cost-per-order figures to compare the efficiency of one purchasing department with another.

Two Basic Methods

There are really only two basic ways to figure cost-per-order (although there are almost an infinite number of variations on these fundamental techniques.) One way is to figure cost-per-order for the purchasing department only. The other way is to consider the impact of a purchase order on the entire organization.

The most common way to figure cost-per-order is for purchasing only. It's easier to calculate and is theoretically more applicable as a measure of purchasing department efficiency. To figure it, all you do is take the total cost of running the purchasing department and divide it by the number of purchase orders issued. That's all you have to do to get the cost-per-order figure that some regard as such a sacred cow.

Look at Every Area

Of course, if you compute cost-per-order only for the purchasing department you're not doing a complete job. Issuance of a purchase order touches off a chain of events that ends when the item purchased is used. The workload in accounting, receiving, inspection, etc. is heavily dependent upon the activity in purchasing.

The fact is a dollar spent on processing a purchase order in receiving is just as important as a dollar spent on the order in purchasing. Both are elements in total cost-per-order. Both have the same effect on the profit-and-loss statement. *If you're going to measure efficiency on a cost-per-order basis, you can't just look at the purchasing department by itself.*

Every department in the plant contributes to the actual total cost-per-order. At the very minimum, requisitions are issued, and the material purchased and the accompanying paperwork must be handled by the requisitioning department. There are also more indirect costs. The greater the volume of purchase orders, the heavier the workloads of the receptionists, the mail boys, the telephone switchboard operators, etc.

Thus to figure the "true" cost of issuing an order you wind up with a very detailed study. In fact the study can get so involved that it tends to become almost meaningless. It becomes not even a mediocre indicator of purchasing efficiency but just a not-too-good barometer of over-all company administrative efficiency.

A Dangerous Concept

With both basic approaches to figuring cost-per-order, you can reduce your cost-per-order with sloppy purchasing. In fact, "peak efficiency" is reached when you don't have any purchasing department and are spending no time or money on making purchases. Logically you then have eliminated completely your cost-per-order. If this "road to efficiency" is impractical, *don't give up if you want to cut both cost-per-order and over-all company profits. Just replace highly skilled buyers with lower salaried clerks. Reduce purchasing to an order typing process.* You'll make tremendous progress in reducing your cost-per-order as calculated by accounting methods.

If it wasn't before, it should now be very obvious why the cost-per-order concept is such a dangerous one. The whole concept rests on the premise that purchasing is strictly a series of clerical operations. Pieces of paper come into and go out of the purchasing department. Entries are made on them with pen, pencil, or typewriter. That's all there is to it. Whether you have buyers or baboons to do the job is immaterial. *The cost-per-order approach leads to a bookkeeping, not a profit-making approach to purchasing.*

Creative and Non-Creative

But let's not kid ourselves. The "bookkeeping" approach to purchasing isn't a sound one. However, paperwork is important in purchasing as in every other administrative activity. And—strange as it may seem after reading what has preceded this—cost-per-order data can be useful. The data must be basically different than that commonly used today, however. It must reflect the concept that there are two quite different activities in purchasing. One is creative; the other clerical.

The creative activities in purchasing include investigating new sources of supply, visiting supplier plants, working on value analysis projects, helping engineers and others on their day-to-day problems, etc. As has already been shown, to measure the efficiency of these activities is ridiculous. The object of this phase of purchasing is not a purchase order or some other type of paper-

Cost-per-Order Figures Make No Sense

A recent survey of purchasing agents indicated that only 22% of respondents attempted to figure their cost-per-order and their estimates varied so widely that one could only conclude that they could not provide a basis for intelligent analysis of departmental efficiency. Some purchasing departments known for efficiency reported cost-per-order as low as $2 or $3; others reputed to be every bit as efficient reported cost-per-order as high as $38. The replies to the survey break down as follows:

Cost per Order	Percent of Respondents
Under $5	75%
$5 to $10	15%
$10 to $15	5%
Over $15	5%

work. Instead, the purpose is to reduce cost, improve the product, etc. Therefore the efficiency of these activities should be measured in relation to what they're supposed to achieve. If the activity is cost reduction, then its efficiency is measured by the cost reductions achieved. This is completely unrelated to the administrative cost of issuing an order.

Check Clerical Efficiency

The clerical side of purchasing is completely unrelated to the creative phase as far as measures of efficiency and performance are concerned. *On the clerical side, the sole object of the activity is to convey information—not to develop or create ideas.* A purchase order, for example, is a means by which you convey your desire to buy something from a supplier. Your sole object is to convey information on price, terms, delivery, etc. As long as you do it accurately, the cheaper the process of conveying the better. In this case, the cost-per-order is a fairly accurate measure of the objective—clerical efficiency.

But only clerical costs should be included in cost-per-order. Typists, clerks, secretaries, etc. spend practically all of their time on clerical activities. To the extent they're applicable, their salaries could legitimately be included in cost-per-order calculations. On the other hand, purchasing agents, value analysts, etc. spend practically all their time on basically creative activitiy. They do not contribute to the clerical effort of issuing an order and, therefore, their salaries should be excluded from cost-per-order calculations.

Buyers, in most cases, are neither "fish nor fowl". They're rarely 100% creative and are never 100% clerical. The part of their job that's actually creative should be separated from the clerical phase. Only the clerical part should be included in cost-per-order calculations. The precise mixture of clerical and creative activities for the buyer depends upon the company, the man himself, the commodities purchased, and the organization structure. One P. A.'s guess that a buyer's job was 80% creative and 20% clerical probably isn't too far off in most cases.

Is The Average Purchasing Department Too Small?

A recent survey by PURCHASING Magazine indicates that, in the typical purchasing department, remarkably few buyers are carrying the entire workload of supplying their plants with parts, materials, and services. Here's what the survey shows:

Number of Buyers in Department	Percentage of Departments This Size
1, 2, or 3	68%
4 or 5	16%
6 to 10	11%
11 to 25	4%
26 or more	1%

Uses vs. Cost

To figure the clerical cost of issuing an order you've actually got to make a more complex study than is needed when you figure the meaningless total cost per order. Is it worth the trouble? The cost-per-order figure that you arrive at probably isn't, in itself, worth the effort that must go into its calculation. After you get the figure, what are you going to do with it? In practice the main purpose of the over-all cost-per-order figure seems to have been to prevent purchasing agents from hiring creative people like value analysts, etc. When you figure a clerical cost-per-order, it can hardly be used as an argument for or against acquiring more creative people.

However, clerical cost-per-order information does have important uses. The figure itself isn't much more than a general barometer and actually isn't too useful. But the detailed studies that support it can be quite helpful. Conceivably, analyzing clerical costs in detail can lead you to a variety of improvements. Here are a few hypothetical examples:

•If you find that buyers are spending a big percentage of their time on clerical work, you might want to make organization changes. You might find, for example, you'll get a more efficient operation by having 3 buyers and 3 girls instead of 4 buyers and 1 girl.

•If you hear about some new form or procedure that's supposed to save you money, you can test it on a theoretical basis before you commit yourself. What you do is analyze its effect on each detailed clerical operation. The object, of course, is to see whether the change will either reduce personnel or permit existing personnel to handle a heavier work load.

•If someone else in company management complains that the purchasing department is costing too much, you've got a defense. The creative people you can justify by the job they do. With the clerical phase you can point to your detailed study and, quite frankly, ask for suggestions for improvement. In many cases, the very fact that you've anticipated a questioning of internal costs will be sufficient to silence any unwarranted criticism.

Whether you finally decide to make studies of clerical cost-per-order or not is not nearly so important as squelching the idea of using over-all cost-per-order as a measure of efficiency and a tool for budgeting. The purchasing agent who accepts the idea of dividing the total cost of running his department by the number of orders issued should make no pretense of being a "member of management." When he accepts clerical measurements, he admits purchasing is strictly a clerical operation.

Buyer Awards Bring

By Ned Kellogg

A better buy from its buyers—that's the purpose of Republic Aviation Corporation's "Buy of the Month Award." Though the program was started less than a year ago, purchasing executives at Republic (Farmingdale, N. Y.) are already convinced that it's paying off in the form of more alert buying.

Competition for the Buy of the Month Award is keen but not obsessive. It gives Republic buyers a reason for trying just a little harder—the kind of push that means one more phone call or a second look at the specs before going home.

Only truly outstanding purchases qualify for the award. A buyer has to make a really exceptional effort. How successful is the program? Tipoff is the fact that since Buy of the Month was introduced last December, approximately 165 purchases have been sufficiently outstanding to be considered possible award winners.

When a Buyer Goofs

Another reason Republic started the program is simply to give recognition to a buyer who does an exceptionally good job on a particular purchase. As one Republic purchasing executive commented:

"It's easy enough to find fault in any purchasing department. If a buyer goofs, he usually hears about it in a hurry—and so does everyone else. But there's a tendency to take a good job for granted. The Buy of the Month Award takes care of this problem."

The way Republic runs its Buy of the Month contest is extremely simple. Candidates for the award are selected on the basis of the purchase orders processed during the month. There is only one winner each month; the award is open only to buyers below the assistant purchasing agent level. In the big-time Republic purchasing department this means there are about 85 men who are eligible.

Screening P.O.'s for potential award winners is handled mainly by Republic's value analysis group. It's part of their regular job to go over every purchase order for possible value analysis leads. In the course of checking P.O.'s it's easy for them to set aside any purchase orders which they think reflect outstanding buys.

In addition, the four assistant purchasing agents have to approve all purchase orders over $1000. If they see a P.O. that they feel might qualify for the award, they forward a copy to the award committee. And occasionally a buyer may take the initiative and suggest to his assistant P.A. that one of his purchases might be a possible award winner.

The award committee has four members: the purchasing agent and three members of the value analysis group. Once a month they sit down and go over each of the possible prize-winning purchase orders. Usually there are between 10 and 20 P.O.'s to be evaluated.

Rating the purchase orders takes about 2½ hours. Evaluating the P.O.'s is not an exact science as any member of the award committee will readily admit. However, the committee has developed a set of eight performance standards to rate each purchase order. This means there is a degree of uniformity in the way each member evaluates the P.O.'s.

Among the performance standards used to select the Buy of the Month (see illustration) are such varied items as: (1) investigation of supply sources; (2) use of value analysis; (3) initiative required over and above the norm; (4) the percentage of price reduction involved.

Each member of the award committee rates the 10 or 20 purchase orders on the eight performance standards. For example, in rating a buyer on his investigation of supply sources, if one committee member believes the buyer did an "outstanding" job, he might give him 5, 4 or 3 points in this category. A "very good job" would rate 2½, 2 or 1 points. An "average" job gets no points. The winner, of course, is the buyer whose purchase order receives the highest total score.

Tell Why They Buy

Determining just how much initiative, imagination and hard work went into making a specific purchase is eased somewhat by the fact that each purchase order is accompanied by a statement from the buyer explaining exactly what he did and why. In fact the clearness and completeness of the buyer's explanation is used as one of the performance standards in rating the P.O.'s (see illustration, point 8).

The practice of writing explanations for every purchase order is standard at Republic. Reason: mainly the fact that almost all of Republic's work is on defense contracts—all the facts and figures have to be available for government inspection.

In selecting the Buy of the Month, the award committee is primarily concerned with the imagination and effort that went into the transaction. On price reductions, for example, the committee is more interested in the

Better Purchasing

percentage saved rather than the total dollar value of the price cut. The committee feels that a buyer who can save $2.50 on a $10 item has made a better buy than the man who saves $1000 on a million dollar order.

The Buy That Wasn't Made

Many of the award winning buys involve such things as switching from a casting to a forging or vice versa, materials substitutions, etc. But one recent award was for a buy that wasn't made at all.

In this case the buyer was trying to get a part for a radar test set. The vendor quoted a figure of $3000 which seemed too high. The buyer learned that the vendor had been making the part for the Navy. A quick call to the Navy and the buyer was offered a surplus part at a much lower price.

Not satisfied the buyer went further. He called the Air Force, told them the situation, and the Air Force arranged a transfer of the part from the Navy. Republic got the part—and at no charge.

The man who wins the Buy of the Month Award gains considerable prestige. His name is put on a plaque which is displayed prominently in the department. He is presented a similar desk plaque by the general manager and gets a stunning model of the Air Force's F-105 airplane. And usually there's a lunch with the director of materials and the purchasing manager.

The Buy of the Month Award of course is not a new idea. With variations, it's being used by many other purchasing departments. The important thing is that at least at Republic—it works. It's helping purchasing do a better job.

Buyer Al Lemley is the first two-time winner of Republic Aviation's Buy of the Month Award. Republic has found that the contest provides a definite incentive for more creative purchasing.

STANDARDS USED IN CHOOSING THE "BUY OF THE MONTH"

ITEM	POINT VALUE Outstanding	Very Good	Average
1. True Competition—Proper Choice of Supplier.	5 4 3	2½ 2 1	0
2. If no competition, was attempt made or consideration given to securing additional sources, before accepting the procurement as sole or single source.	5 4 3	2½ 2 1	0
3. Has buyer worked with supplier, Engineering or other department to suggest changes in order to reduce costs?	6 5 4	3 2 1	0
4. Does it appear buyer made a value analysis (cost and production analysis) of the buy-over and above Item 3.	6 5 4	3 2 1	0
5. Initiative over and beyond that used in normal buy (not covered by items above).	6 5 4	3 2 1	0
6. Negotiating lower price from low bidder or present source.	6 5 4	3 2 1	0
7. Percentage of price reduction.	5 4 3	2½ 2 1	0
8. Quote Summary—a complete understandable explanation of the buy.	5 4 3	2½ 2 1	0

Each purchase order considered for the Buy of the Month Award is rated on the eight performance standards shown on this evaluation sheet. Points are awarded on the basis of the performance in each of the eight categories.

Photos courtesy of Toledo Stamping Co.

What the P.A. Should Know About

Stampings and Press Formed Parts

By T. C. DuMond

This is the thirteenth in a series of articles on the technical aspects of purchasing. The material that will be presented is meant to provide a "refresher course" for experienced buyers and basic instruction for trainees or buyers new to specific commodities. Mr. DuMond is the author of the well-known book, "Fabricated Materials and Parts" (Reinhold Publishing Corp., New York.) A mechanical engineer, he has spent years in technical writing.

THUS FAR we have considered parts which have considerable mass in relation to their overall size. Now we consider parts which might be large, but, because they are made from sheet metal, are relatively light in weight.

Stampings and press formed parts range in shape from flat sheet metal parts to huge drawn shapes such as bath tubs or automobile bodies. Basically all of these parts are produced in a similar manner in that their forming requires carefully made dies and powerful mechanical or hydraulic presses.

An ordinary washer could be considered typical of stamped parts. In this type of part the metal is punched by the dies and formed by a shearing action which literally cuts the part from the raw sheet stock. In making drawn shapes the metal is deformed over dies to produce the desired shape. Pots and pans are typical drawn parts.

Although normally stampings and press formed parts are only considered when large quantities are involved, technological developments of the last few years make press forming applicable to the production of relatively small quantities of some shapes.

Stamping and press forming operations are relatively fast and can be performed on nearly any metal that is available in sheet and strip form. For best results, though, ductile metals should be used.

It would be virtually impossible to list even a small fraction of the

range of parts made by these methods, but we see them about us constantly. For example, automobile bodies, doors and fenders, metal ash trays, household and office switchplates, metal desks, metal lamp shades, dictating machine housings, refrigerators, sinks and thousands of other parts.

The Process

Blanking and notching, the two most common forms of stamping, produce parts in which the forming action comes from deforming the metal beyond its shear point until a clear break results. In drawing and forming stresses created in the metal are in the plastic range. They are great enough to cause permanent deformation but not so high as to break the metal.

Presses range from the comparatively simple to highly complex depending upon the type of parts to be produced. In addition to positioning the die properly to produce the desired shape, the presses must also hold the blank and advance it to a subsequent position should more than one operation be required. Dies can be made to eject the part when forming is finished.

Dies for stamping and drawing can be made from many materials, depending upon the type of part and the quantity involved. When large numbers of parts are anticipated, tool steel dies must be used; punching requires extremely hard and tough dies. When forming parts of the softer metals, plastics, wood and other soft metals can be used for dies. In the newer forming processes, combinations of metal and rubber dies are used.

Although punchings can be made up to about ¼ inch thick, the process is best suited to thinner parts. Drawn shapes can be made to a depth approximately equal to 1½ times the diameter of the punch portion of the die. Greater depths can be attained by annealing the parts and then completing the draw in another set of dies.

Either mechanical or hydraulic presses can be used for blanking or press forming. However, the quick action of a mechanical press is best suited to making stamped parts and the slower force of the hydraulic press is most satisfactory for difficult and complex drawn parts.

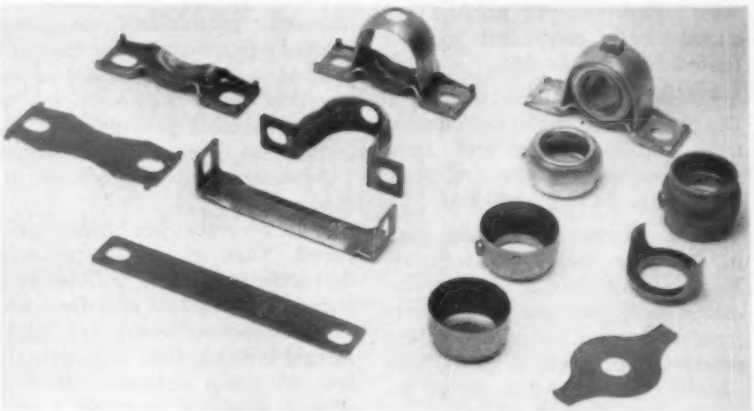
Cost Factors

When parts are properly selected for the processes, stamping and press forming becomes the least expensive method of making parts falling within their ranges. Indeed, for some parts these are the only methods short of cutting out parts by hand, or hand hammering them over a simple form.

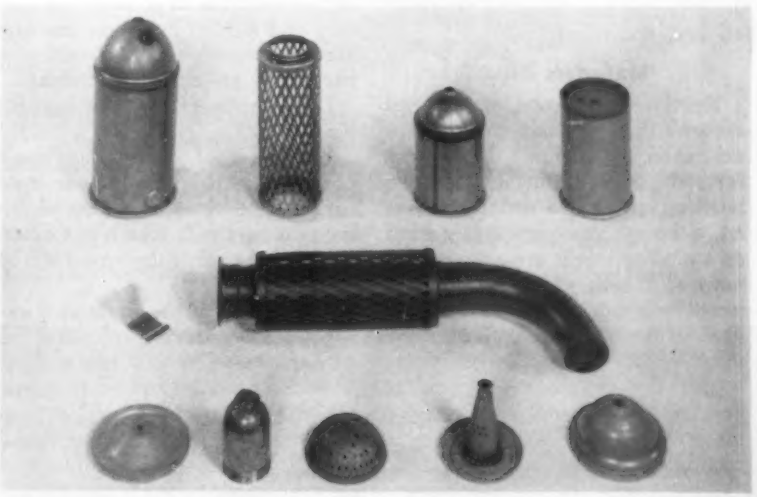
Raw Materials—Generally, raw materials costs are low to moderate. Usually the highly alloyed, expensive metals are not press formed, although titanium and some of the other costly new metals are being used.

Tool and Die Costs are moderate to high. Simple blanking dies are least expensive. Complex forming dies can cost many thousands of dollars. New forming techniques of recent years permit a reduction in die costs by eliminating the more expensive concave portion of a die and replacing it with a rubber pad or a liquid-filled rubber bag. In the latter instances the rubber pad or rubber-enclosed liquid exerts the pressure to form the part over a punch which is mounted on the press bed.

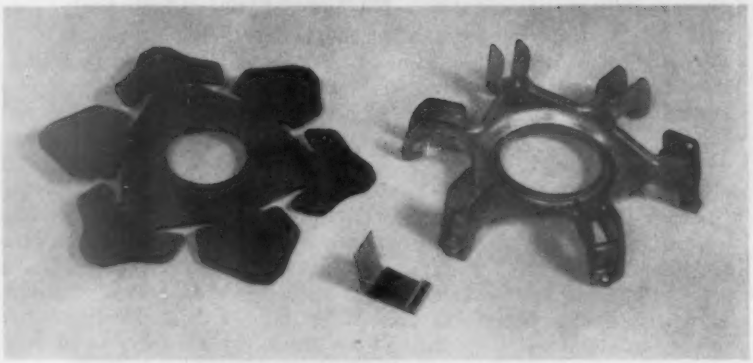
Optimum Quantities of drawn and press formed parts are usually cited as being in excess of 10,000



The four component parts of a bearing retainer start as simple stamped shapes and are then press formed to the desired contour and assembled.



Many products are made in two or more parts and then assembled by welding. Holes can be achieved by using expanded metal or by a piercing operation during forming.



In press forming the complicated spider section of a wheel, a carefully cut blank is first stamped and then drawn to final shape.

pieces. The needs of the aircraft industry, however, cause this figure to be ignored frequently.

Labor Costs are moderate. Semi-skilled labor is used, because most operations of presses are automatically controlled and actuated by push button.

Finishing Costs are moderate. Die lubricants must be cleaned from finished parts and most shapes require trimming and some other secondary operations.

Scrap Losses are usually high in stamping and press forming. Many plants recover some waste materials by stamping small parts from the scrap generated in the production of larger shapes. There usually will be some scrap regardless, though, because a certain percentage of the raw material must be used to hold blanks in the dies during forming. Later the gripping area must be trimmed off and discarded.

Materials Used

Nearly all common metals and several that are not so common are used in stamped and press formed parts. Materials that are hard or spring are usually avoided, although some materials such as stainless steels are springy by nature. Where springy materials must be used, special techniques are required, particularly for press formed parts. With such materials the degree of forming is greater than normal so when the inevitable spring-back occurs it results in the desired shape.

Most stampings and other press formed parts are produced with the raw material cold. However, brasses are sometimes heated to 950 F and magnesium to between 450 and 650 F to make forming easier.

Advantages and Limitations

Even though the limitations imposed, particularly on press formed parts, outnumber the most evident advantages, there is no question about the usefulness of these processes provided the selection has been made prudently.

Advantages usually offered include:

1. Low costs per piece produced. This, of course, assumes that sufficient parts will be produced to offset tool and die costs.
2. Production rates are high. Actual forming time is extremely low, so when automatic feeding of raw stock is involved output can be rapid.
3. Surface smoothness is usually good. Highly polished dies, drawing compounds to protect the surface and a good finish on the raw material combine to produce a part with an excellent finish.

Disadvantages or limitations include:

1. High tool costs. For some press formed parts lower tool costs are being achieved by adopting new methods which cut down die requirements by one-half or more.
2. Because of die costs and expensive machinery required, high quantities are usually required to justify stamping or press forming.
3. Waste is often higher than for some other processes. Some recovery of scrap is possible, and careful layout of parts can reduce scrap loss somewhat.
4. Designs, especially of press formed parts, are restricted. Most economical to produce are circular sheets of uniform contour.
5. Because of the care with which dies must be made and their intricate natures, a minimum of several weeks is usually required to get a part into production.

Press formed parts range in size from small parts such as fountain pen caps to large shapes such as automobile bodies or airplane fuselage sections. Sections can be formed as thin as 0.003 to 0.005 inch and up to one-quarter inch thick.

In considering dimensional tolerances on stamped and formed parts one must take into account the thickness of the stock from which it is formed. The following table will show how dimensions become less accurate as sizes and thicknesses increase:

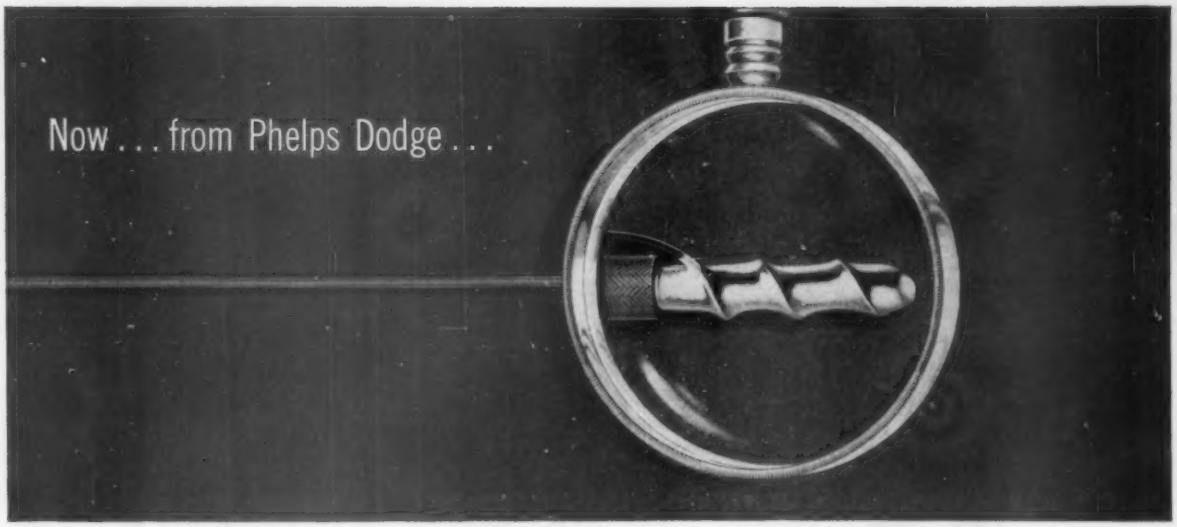
Thickness	2 in. diameter	6 in. diameter
1/32 in.	0.005	0.008
⅛ in.	0.008	0.012
¼ in.	0.015	0.020

When to Choose

Usually it is evident when a part should be made by these processes. However, there has recently been a trend toward parts of this type from such fields as sand castings. An example is the end housing of an electric motor. Once considered only as a sand casting, the last few years has seen several manufacturers turn to stamped parts. Too, some small parts once considered too tiny for press forming are now being made in this fashion. One competitive method on certain shapes is spinning. However, because of the amount of hand work involved in making spun shapes, when quantities become large it is likely that they will be more economical as press formed parts.

Simple stampings can assume nearly any shape, but press formed parts that approach the contour of a round shell are easiest to produce. Irregular shapes usually require flanges which tend to reduce the speed of output.

One important element is whether the part might be made cheaper by producing it in two or more simple shapes that are subsequently joined by welding, brazing or adhesive bonding.



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How to Collect When Vendor Fails to Deliver

By Paul H. Johnson

IN MAKING sales contracts a purchasing agent realizes that the seller's failure to deliver or delayed delivery can often materially injure the PA's company.

For instance, suppose a company is tooling up to put a new product on the market ahead of a competitor and a special drill press is required. Failure of the vendor to deliver the drill press on schedule might enable the buyer's competitor to beat him into the market. In such a case the damage which would result by failure to deliver would be very difficult to ascertain exactly. But suppose the vendor would acknowledge, while the contract is being negotiated, that his failure would result in damage to the buyer.

Here the purchasing agent may wish to stipulate in the contract the amount of damages which will be payable by the seller in the event the contract is breached. The damages thus stipulated beforehand are referred to as liquidated damages. A general knowledge of the legal implications involved in liquidated damages is essential to a purchasing agent.

The Court's Attitude

The Uniform Sales Act makes no specific reference to the use of stipulated damages in sales contracts. However, it does provide that "the liability under a contract to sell may be varied by express agreement of the parties." The courts have jealously guarded the recognized method of determining damages by legal principles, including the introduction of evidence of actual injury sustained. They have been reticent to permit contracting parties to impose penalties on each other which only the law has a right to do. Consequently, before the courts will enforce damages called for in a contract, the damages so stipulated must meet three requirements:

First, the damages must be uncertain or difficult to prove.

Second, there must have been demonstrated an intent of the parties to liquidate them in advance.

Third, the amount of the damages must be reasonable and not greatly disproportionate to the presumable loss or injury.

Provisions for damages which do not meet these three requirements are termed "penalties" and will not be enforced.

Almost without exception, the courts of the United States have refused to enforce penalties in sales contracts. A contract for a penalty is an agreement to pay a stipulated sum in case of a breach of the contract, intended to coerce performance or to punish default. A contract for liquidated damages is a means by which the parties in advance of the breach fix the amount of damages which will result therefrom and agree on its payment. A penalty is the payment of a stipulated sum on breach of a contract irrespective of damages sustained. Liquidated damages are the amount agreed by the parties beforehand to be payable upon a breach when the actual damages are speculative, uncertain or difficult to prove.

How to Distinguish

Whether a sum agreed to be paid as damages for the violation of a sales agreement is to be considered as liquidated damages or as a penalty is dependent upon the meaning and intent of the parties. This is determined by the provisions of the contract, the terms used to express their intent and the peculiar circumstances of the subject-matter of the agreement. The mere use of a particular term in stipulating damages is not conclusive. The effect to be given a proviso in a contract concerning damages is a question of law and not whether the parties decided to call the term a penalty or liquidated damages.

Many sales contracts which require a "down-payment" or "earn-

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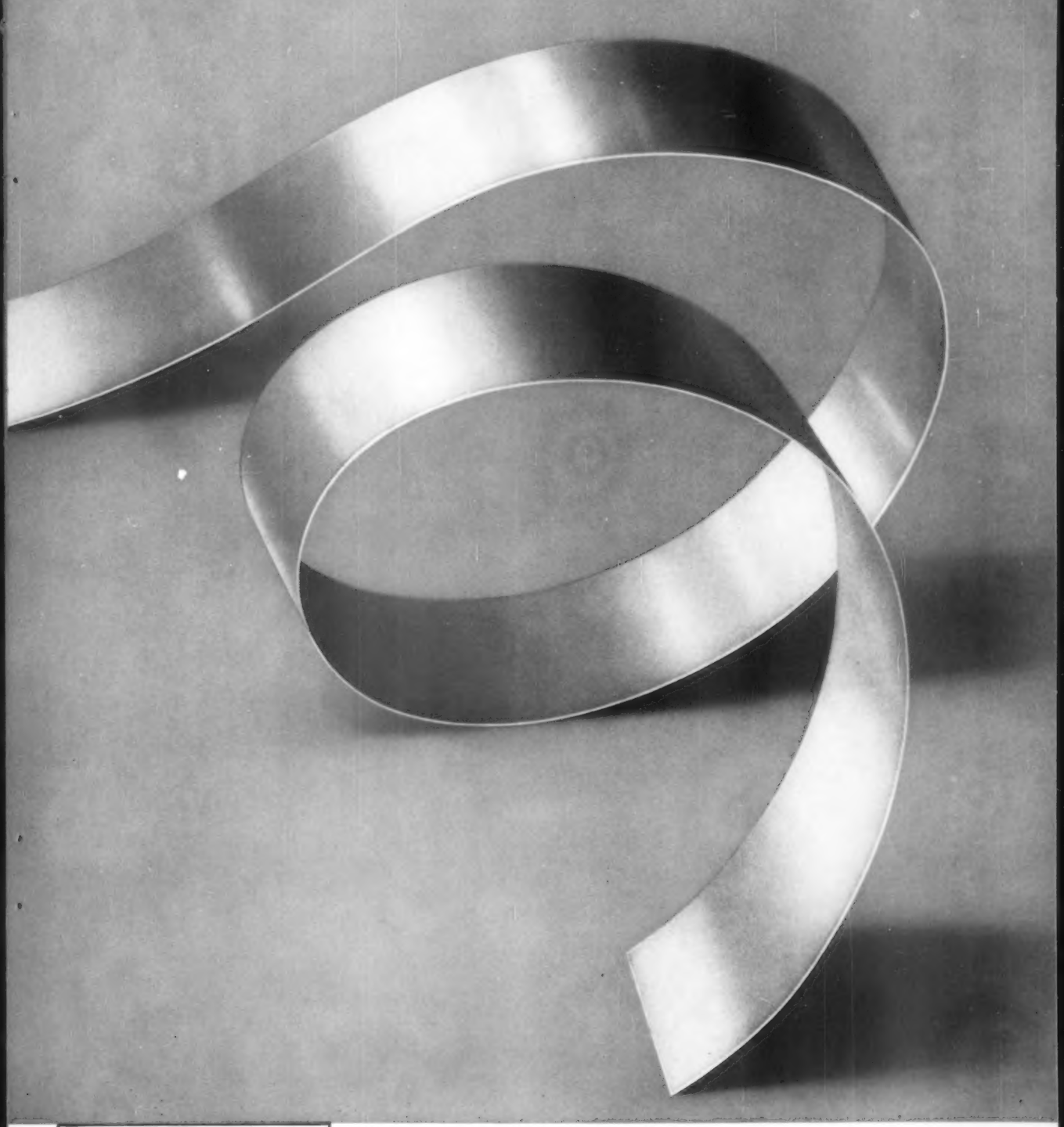

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est money" to bind the bargain provide for a forfeit of the sum for a breach by the buyer. The court will decide whether the forfeiture was a penalty, in which case it will not be enforced, or liquidated damages, in which case the seller can retain the forfeiture.

The courts may look at prior negotiations between the parties to decide whether liquidated damages or a penalty was meant by a provision in a contract. As a practical matter a purchasing agent should always use the expression "liquidated damages" in the contract provision if that is what is intended; for, although it isn't conclusive, the courts would always accord the name of the provision some weight.

Seller Must Know

Unless the damages from the breach of a contract will be speculative, uncertain or difficult to prove there is no need for stipulating damages in the contract and consequently they will not be enforced. For instance, if the drill press referred to was not special but was readily available on the open market, the damage for non-delivery would be the difference between the contract price and the market price only. Any liquidated damage clause would not be enforcable.

For the seller to be liable for special damages under a contract he must be made aware of the circumstances which will give rise to the special damages if he fails to perform. A brief recital in the contract of the special circumstances involved preceding a stipulation for liquidated damages is advisable.

The contract should also show that the parties considered the possibility of a breach and that they were aware that special damages of an uncertain or undeterminable amount would result and that they have decided on a sum to settle the amount in advance.

One of the best uses of liquidated damages is to compensate the buyer for the seller's delay in delivery. A provision in a contract for the sale of electrical machinery to be manufactured providing that for each day of delay in the delivery $25.00 should be deducted from the purchase price was held by the courts to be a stipulation for liquidated damages, not a penalty, and was enforced. Provisions for per diem payments or of a specified sum for delay in performance within a specified time are usually construed as stipulations for liquidated damages, where actual damages are uncertain or difficult to prove.

Only Reasonable Damages

In fixing the amount of the damages to be stipulated in the contract it is important that they be made to conform to the best estimated actual damages that will occur. Agreements to pay fixed sums plainly without reasonable relation to any probable damage which will follow a breach will not be enforced.

In determining the reasonableness of the damages stipulated the court will take into consideration the relation of the parties, their situation, the presence or absence of fraud or oppression, and the purpose the agreement seeks to subserve, but not whether the amount is wise or considerate. Where a contract provides for the payment of a fine in addition to the amount of actual damages caused by the breach, the fine is a penalty and will not be regarded as liquidated damages.

A purchasing agent must be careful in fixing the amount of liquidated damages because he may be limited to this amount even if the actual damages sustained greatly exceed those stipulated.

A plaintiff cannot recover liquidated damages for a breach for which he is himself responsible or to which he has contributed. Where both parties are at fault there is no apportionment of liquidated damages. Thus, it is important that specification changes or anything which will give the vendor an excuse for delay be avoided if stipulations for liquidated damages are going to be of value.

Formerly it was a general tendency of the courts to hold the stipulations for damages as penalties, since they could then apportion the loss to the actual damages sustained. The modern tendency is to look upon them with candor, if not with favor, and allow parties to make their own contracts and carry out their intentions.

With court dockets becoming so crowded and lawsuits becoming so extended and delayed it is certain that more and more contracting parties are going to endeavor to eliminate legal actions and settle their damages in advance whenever possible. In the future provisions for liquidated damages will become more prevalent in sales contracts, and purchasing agents will give this small part of sales law more attention.

Damages stipulated in a contract will not be enforced by the courts unless the damages from breach of the contract are speculative, uncertain or difficult to prove.

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world's largest family of valves

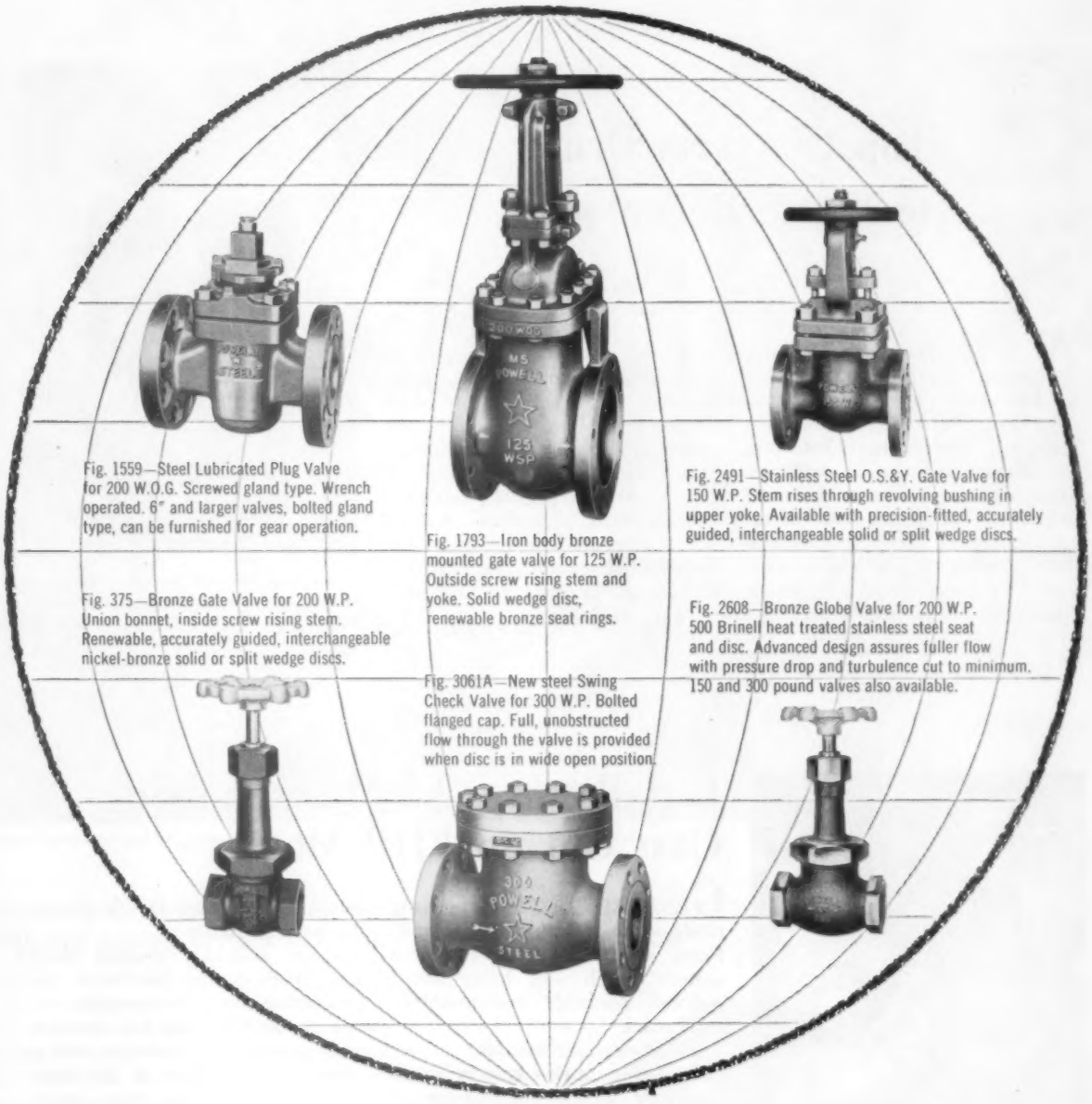

Fig. 1559—Steel Lubricated Plug Valve for 200 W.O.G. Screwed gland type. Wrench operated. 6" and larger valves, bolted gland type, can be furnished for gear operation.

Fig. 375—Bronze Gate Valve for 200 W.P. Union bonnet, inside screw rising stem. Renewable, accurately guided, interchangeable nickel-bronze solid or split wedge discs.

Fig. 1793—Iron body bronze mounted gate valve for 125 W.P. Outside screw rising stem and yoke. Solid wedge disc, renewable bronze seat rings.

Fig. 3061A—New steel Swing Check Valve for 300 W.P. Bolted flanged cap. Full, unobstructed flow through the valve is provided when disc is in wide open position.

Fig. 2491—Stainless Steel O.S.&Y. Gate Valve for 150 W.P. Stem rises through revolving bushing in upper yoke. Available with precision-fitted, accurately guided, interchangeable solid or split wedge discs.

Fig. 2608—Bronze Globe Valve for 200 W.P. 500 Brinell heat treated stainless steel seat and disc. Advanced design assures fuller flow with pressure drop and turbulence cut to minimum. 150 and 300 pound valves also available.

A solution for every kind of flow control problem is as near as your local Powell distributor. Powell valves are designed and engineered in the largest variety of metals and alloys, to handle any medium, every flow control requirement. There are Powell distributors in all principal cities. Or, if yours is a special engineering problem, write to:

THE WM. POWELL COMPANY • *Dependable Valves Since 1846* • **Cincinnati 22, Ohio**

For More Information Write No. 200 on Inquiry Card—Page 32

Top Converts Drum to Waste Receptacle

A DRUM TOP converts any 30 gallon grease drum into a self-closing waste receptacle. The drum can then serve as a sanitary, fire-resistant litterbug eliminator. Adjustable holdown clamps permit Bennett Model 63 drum tops to fit the wide diameter range of 30 gallon drums. The opening at the top is protected by a rubber gasket, which eliminates sharp edges and the possibility of cutting hands while depositing waste, and also gives a silent door action. The door hinge and spring mechanism are enclosed for protection against atmospheric conditions, making the container usable outdoors. Comes with phosphate treated heavy gage steel and special outdoor baked enamel finish. Available from Bennett Manufacturing Co., Alden, New York.

Shown on this 30 gallon drum is a special top which converts the drum into a self-closing waste receptacle.

Plug-in quick-connect terminals cut installation wiring time in half on new G-E Form G FHP motors.

Installation and Maintenance Cost Cut on FHP Motors

GENERAL ELECTRIC recently made some major changes in its Form G fractional horsepower motors which will bring about reduced assembly and maintenance costs.

Major changes include:

- Plug-in quick-connects for all terminals which cut wiring in half.
- Quick change of rotation by simple reversal of the two plug-in motor leads.
- Brass links that simplify voltage change on dual-voltage motors.
- An enlarged wiring compartment and a narrower terminal board that permit fast hook-ups during installation.
- An anti-rust treated shaft and bright-plated hardware for protection against corrosion.
- A built-in lug for convenient grounding connection and a composition washer in the centrifugal switch for quiet operation.
- A new bonding method for insulating the stator winding and metal clamps which securely fasten the stator laminations for more uniform core alignment.
- Identification and maintenance data that are clear and easy to read.

For More Information Write No. 201 on Inquiry Card—Page 32→

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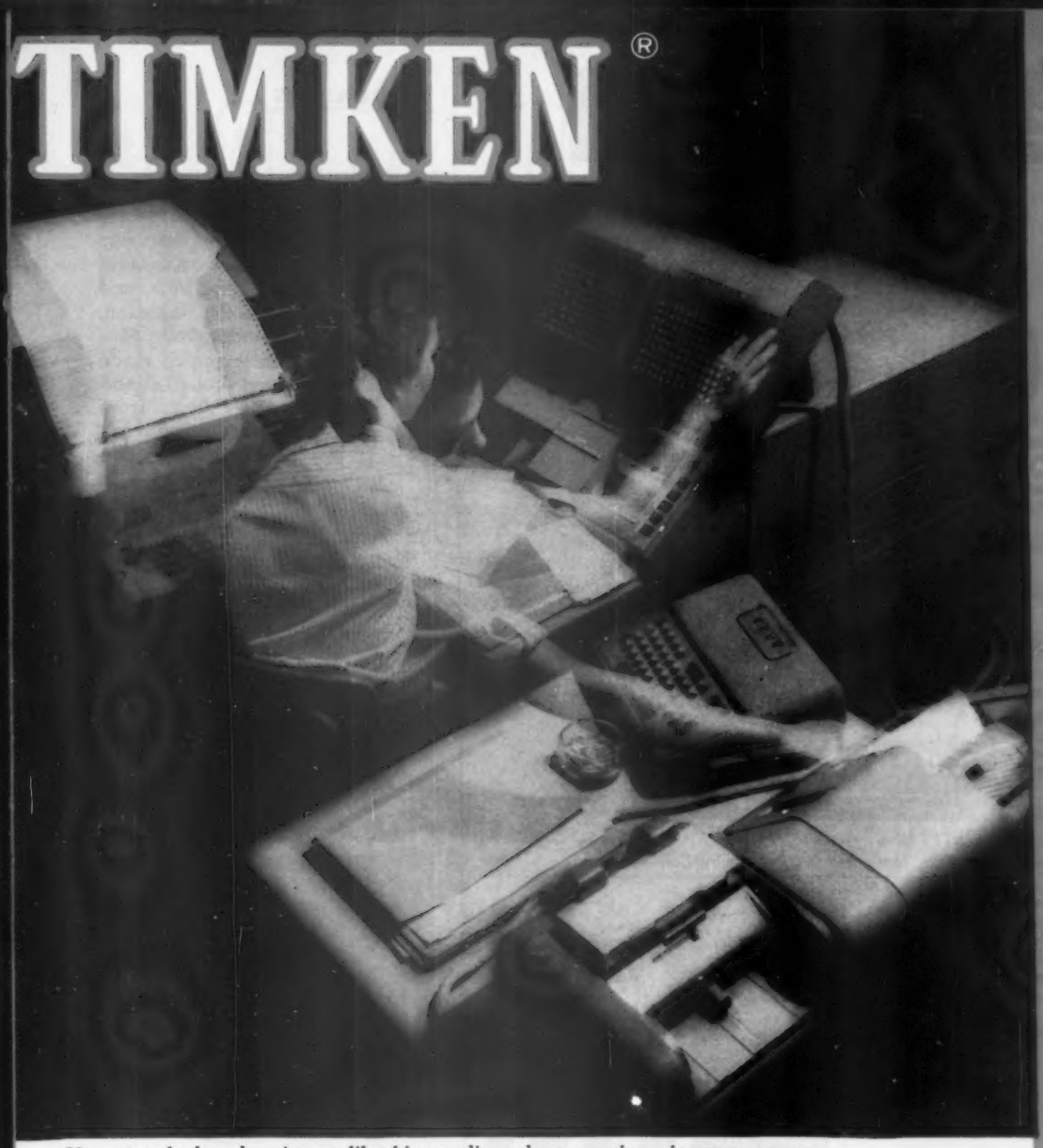

Newest methods and equipment like this expedite order processing—increase accuracy.

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To give you faster, better service, we've developed a radical new concept in warehousing, order processing and shipping. It's built around an electronic computer installation and new $3,000,000 Shipping Center at Bucyrus, Ohio. The new system helps you six ways: 1) Most of your bearing orders are acknowledged with a shipping date within 24 hours. 2) Cuts shipment and invoice preparation time. 3) Your entire order of bearings up to 14″ O.D. comes from one shipping point. 4) Your orders with the same shipping date are consolidated saving you time and money. 5) Helps assure delivery when promised, by controlling our production to your needs. 6) Gives you an almost unlimited source of supply for tapered roller bearings, from our normal inventory of over 12 million bearing parts. It all adds up to one more reason why Timken bearings are your No. 1 bearing value. The Timken Roller Bearing Company, Canton 6, Ohio. Cable: "TIMROSCO".

When you buy Timken® bearings you get...

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3. The best-known name in bearings
4. The pace setter in lower bearing costs

Fastest way to get

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CUT COSTS 4 WAYS

with **AURORA**® *End-Suction Centrifugal* **PUMPS**

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EXTREMELY HIGH EFFICIENCY
Required head and capacity delivered with lower HP motors. Saves space, saves initial outlay, saves operating costs.

LOW NPSH CHARACTERISTICS
Saves head room where critical suction conditions exist.

LONGER TROUBLE-FREE OPERATION
Better construction, finer materials keep lines operating for less cost.

FASTER MAINTENANCE WHEN NEEDED
Exclusive features enable easy disassembly without disturbing pump-motor alignment or discharge piping.

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AURORA PUMP DIVISION
THE NEW YORK AIR BRAKE COMPANY
AURORA - ILLINOIS

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For More Information Write No. 202 on Inquiry Card—Page 32

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Division of West Virginia Pulp and Paper Company

Sandusky, Ohio
15 Factories
42 Sales Offices

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For More Information Write No. 204 on Inquiry Card—Page 32

Products

Hole Center Finder, Fast and Accurate

In one operation a tool transfers the location of a hole, establishes the center point of the hole, and marks the hole for drill location. The tool comes in a kit form, consisting of one center punch made of hardened ground tool steel and 8 sleeve plugs. Sizes range from 5/16″ to ¾″. Sleeve plugs are 1″ long. All plug diameters are held to plus or minus 0.001″ to allow for precise and accurate layout work. For use on metal, plastic and wood or any other piece of material where locating of center positions for drilling or calibrating is needed. James Products Co., 801 Mentor Ave., Mentor, Ohio.

Write No. 21 on Inquiry Card—Page 32

X-Ray Control Makes Images Through 4 inch Steel

A 150-250 kv industrial X-ray control can produce clearly defined images through 1/8 inch of aluminum or four inches of steel. Offering a range of 30 kv to 250 kv, the control is provided with a 150-kv transformer or used as a 250-kv control when coupled with a 250-kv transformer. Circuitry in the control includes overload and overvoltage protection. Either overload or overvoltage automatically stops the instrument. An indicator light instantly displays overload; excessive voltage can be seen immediately on its direct-reading kilovoltage meter. Made by Westinghouse Electric Corp., X-Ray Department, P.O. Box 416, Baltimore 3, Md.

Write No. 22 on Inquiry Card—Page 32

The Bostitch line of desk staplers is often the first introduction Purchasing Agents have to our company. The performance of these in office jobs frequently leads to applications for Bostitch industrial staplers in the factory and shipping room.

That's because our desk staplers impress buyers with the way they work. They're rugged. They're famous for being trouble-free. They come in styles for every office fastening job. They're attractive. They last for years. And service, although rarely needed, is always close by.

Bostitch desk staplers are everything good staplers should be. A Bostitch Economy Man (one of the 350 who work out of 123 U. S. and Canadian cities) will show you exactly what that means. He's listed in your phone directory under "Bostitch."

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730 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND

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WHY TRY TO SOLVE YOUR GEAR PROBLEMS ALONE?

PERKINS can custom-cut a precision gear to fit your exact needs...make you a gear that guarantees full capacity and trouble-free performance. Many gear-makers promise a precision gear — Perkins delivers precision . . . always. Fifty-two years of gear-making for aircraft, automotive and instrument manufacturers assure top quality. Extensive facilities, modern equipment, rigid production and quality controls produce gears consistently uniform in tolerance with a burr-free micro finish. Perkins quality eliminates production delays and costly rejects for you . . . Perkins gears wear longer, cost you less in the long run. Ask us to quote on your next gear requirement. Then judge for yourself.

YOURS ON REQUEST Folder showing custom gears Perkins has made (from various materials) for aircraft, automotive, precision instruments, home appliances, portable and machine tools, and other products. Includes Perkins facilities for producing various gear types and sizes. *Write today.*

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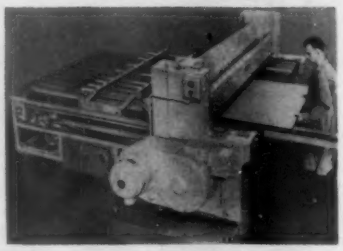
MACHINE AND GEAR CO.

Dept. 37, West Springfield, Mass.
Telephone: REpublic 7-4751

For More Information Write No. 206 on Inquiry Card—Page 32

Products

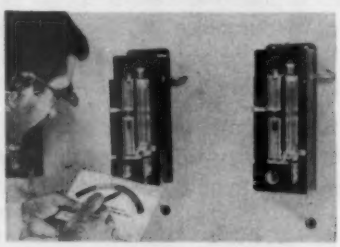
Unit Automates Sheet Coil Gaging and Feeding



A high-speed automation unit accurately gages and feeds sheet, coil or strip stock from standard square shears to provide automatic trim or cutoff operations. Called the Shear-Pacer, the unit is mounted at the rear of a standard square shear and its electrical control system integrated with that of the shear. One operator can feed either sheet or coil stock to the shear. The unit automatically advances the sheet to gaging fingers, operates the shear and carries the trimmed sheet to a stacker unit. Stock feed rate is adjustable from 80 to 300 feet per minute. When coil stock is being handled, a hump table unit is provided to operate in conjunction with the Shear-Pacer which feeds the stock continuously from the coil cradle. Press Automation Systems, Inc., 25418 Ryan Rd., Warren, Mich.

Write No. 23 on Inquiry Card—Page 32

Inexpensive Automatic Colorimetric Analysis

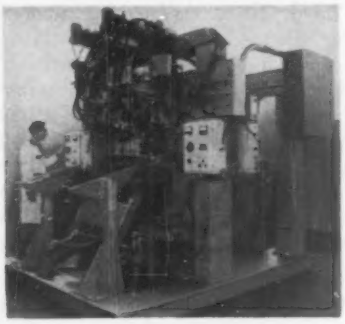


Chemical analyzer has no moving parts and no electric or pneumatic power required for operation. It is powered entirely by the gravity head of the sample. Costing one-third as much as low-priced conventional analyzer, it

enables untrained operators to make tests in a fraction of the time formerly required. Accuracy is adequate for normal plant sampling, ranging within 2 to 5 percent of the reading. An untrained operator can make checks on the spot—no time delay while he carries samples to the lab. Chemalyzer unit automatically mixes precise volumes of sample liquid and reagent to reveal sample properties colorimetically. Readings taken by comparing gradations on a standard color chart with the sample in the instrument's optical cell. Florida Instrument Co., 1300 East Mermaid Lane, Philadelphia, Pa.

Write No. 24 on Inquiry Card—Page 32

Welding System Permits Joining of Metal Parts With Non-Matching Edges



A magnetic tape tracer welding system permits the joining of metal parts having untrimmed, out-of-tolerance, straight line or contour weld edges in a continuous automated welding operation. The system controls self powered welding heads which automatically follow any type welding contour with a high degree of accuracy. This is accomplished by having the basic welding head carriage follow the proposed design contour of the part weld line. A mechanical probe mounted through a slide on the welding head carriage follows the actual weld contour line. Expert Welding Machine Division, Expert Die and Tool Co., 17144 Mt. Elliott Ave., Detroit 12, Michigan.

Write No. 25 on Inquiry Card—Page 32

BEFORE...
Separate Bolts, Nuts and Washers complicate inventories, increase assembly costs.
AFTER...
Washers as integral parts of bolts and nuts eliminate problems, speed assembly at lower cost.

Save Money

by simplifying fastener design

Here is a simple application of a basic bolt making principle which is affecting substantial savings for a number of manufacturers.

These savings, resulting from simplified design, are realized in every step of the operation from lower first cost of the fasteners through inventory to final assembly. Totalled, they are well worth while.

There are many other basic principles . . . often overlooked in designing and specifying fasteners, which are of importance cost-wise.

You'll find them in our new booklet, "How to specify fasteners . . . and save". Filled with drawings and charts, it makes a handy guide in designing or buying any headed parts.

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NOW OFFERS
LARGEST SELECTION OF
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99 Sizes
433 Different Bores

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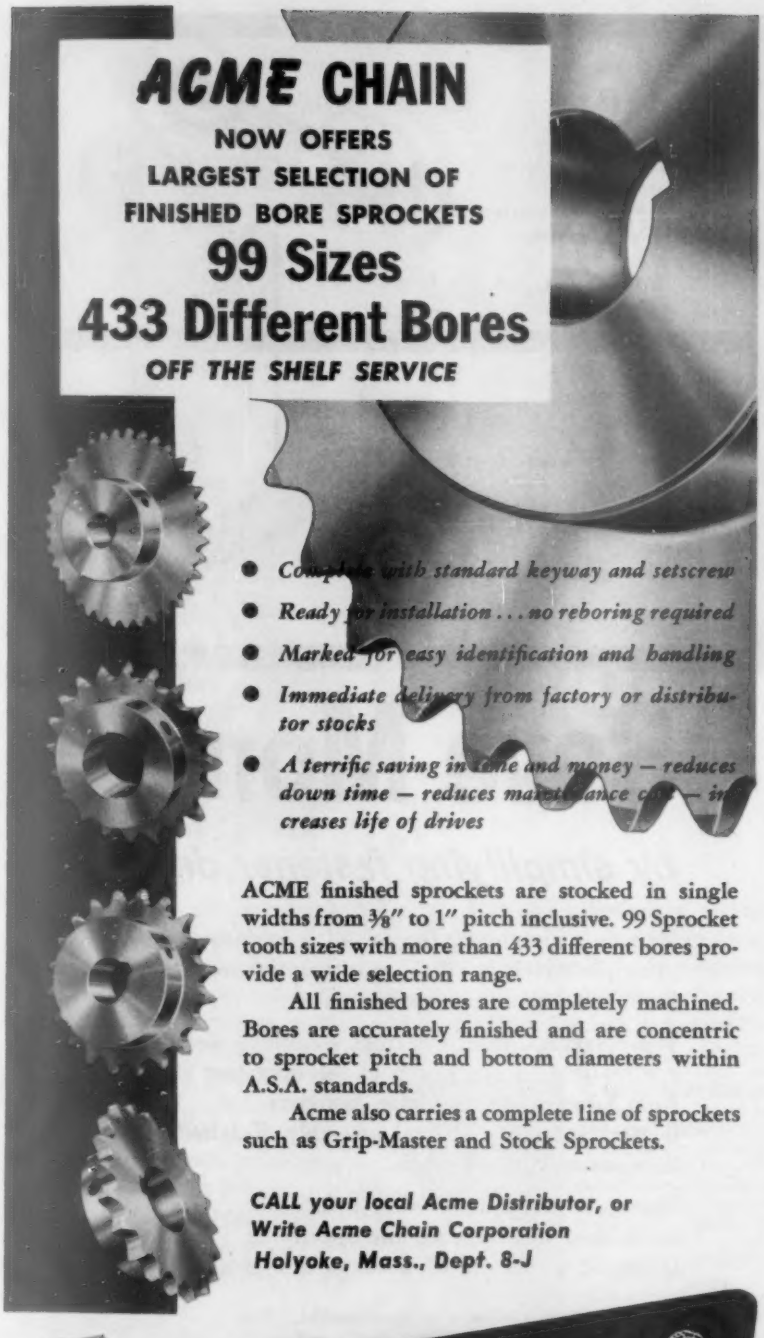

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- *Ready for installation . . . no reboring required*
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- *A terrific saving in time and money — reduces down time — reduces maintenance cost — increases life of drives*

ACME finished sprockets are stocked in single widths from 3/8" to 1" pitch inclusive. 99 Sprocket tooth sizes with more than 433 different bores provide a wide selection range.

All finished bores are completely machined. Bores are accurately finished and are concentric to sprocket pitch and bottom diameters within A.S.A. standards.

Acme also carries a complete line of sprockets such as Grip-Master and Stock Sprockets.

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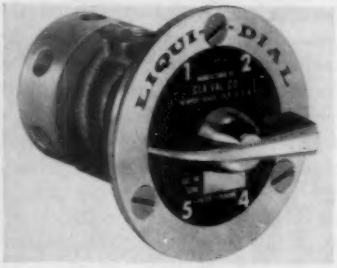
COMPLETE LINE OF ROLLER CHAINS AND SPROCKETS • DOUBLE PITCH CONVEYOR CHAINS • STAINLESS STEEL CHAINS • CABLE CHAINS • FLEXIBLE COUPLINGS • STANDARD AND SPECIAL ATTACHMENTS

For More Information Write No. 208 on Inquiry Card—Page 32

Products

Master Control Valve Simplifies Processing



Complex industrial and water conditioning processes can now be controlled by the simple turn of a dial, according to the Automatic Valve Systems Company, 1535 Monrovia Ave., Newport Beach, Calif. Their Avsco Liqui-Dial DM Control uses hydraulic pressure to actuate up to 36 remote valves from a single location, turning them on and off according to any preset sequence. The pressure in the system, acting through small pilot lines, holds the valve disc assembly closed by pressing on a flexible diaphragm. The DM Control opens the valves by interrupting this pressure, at the same time venting the pilot tube to the atmosphere. Line pressure lifts the diaphragm, allowing full flow to occur.

Write No. 26 on Inquiry Card—Page 32

Lead-Free Enamel For Aluminum

Porcelain enamel for aluminum is completely lead-free. This provides greater adhesion and color reproducibility than lead-bearing frits. Strips of coated aluminum have been twisted as many as three times around without flaking off the enamel coating. Other advantages include greater coverage, abrasion resistance, and resistance to chemical attack. Used in coating aluminum architectural panels, aluminum cooking ware, advertising signs and other applications. American Lava Corp., Chattanooga 5, Tenn.

Write No. 27 on Inquiry Card—Page 32

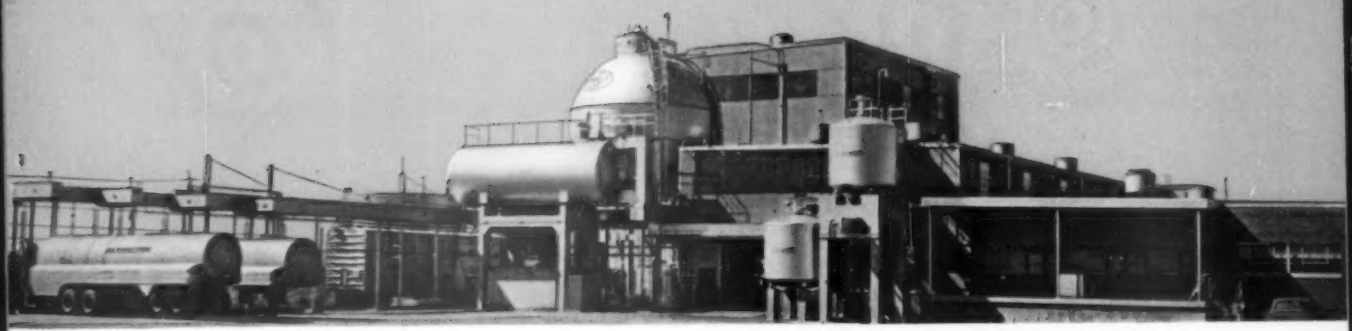
For More Information Write No. 209 on Inquiry Card—Page 32→

INDUSTRIAL GASES... NATIONWIDE... FROM AIRCO

Air Reduction gases, among them oxygen, nitrogen, argon, hydrogen, helium and carbon dioxide are vital commodities in the metal-working industries.

In other industries, too, Air Reduction gases are playing an important role—food processing, electronics, steel, aircraft and missiles, and chemicals.

To all industries, Air Reduction supplies gases in whatever quantity needed, and in whatever form—gaseous or liquid. (Except hydrogen—available in gaseous form only and helium also available in liquid form currently on West Coast only, elsewhere in gaseous form.) Air Reduction industrial gas specialists, with years of practical experience and technical training, are at your service to help you make the most efficient use of industrial gases. Ask the Airco representative in your vicinity to show you why your gas requirements are best served by Air Reduction.



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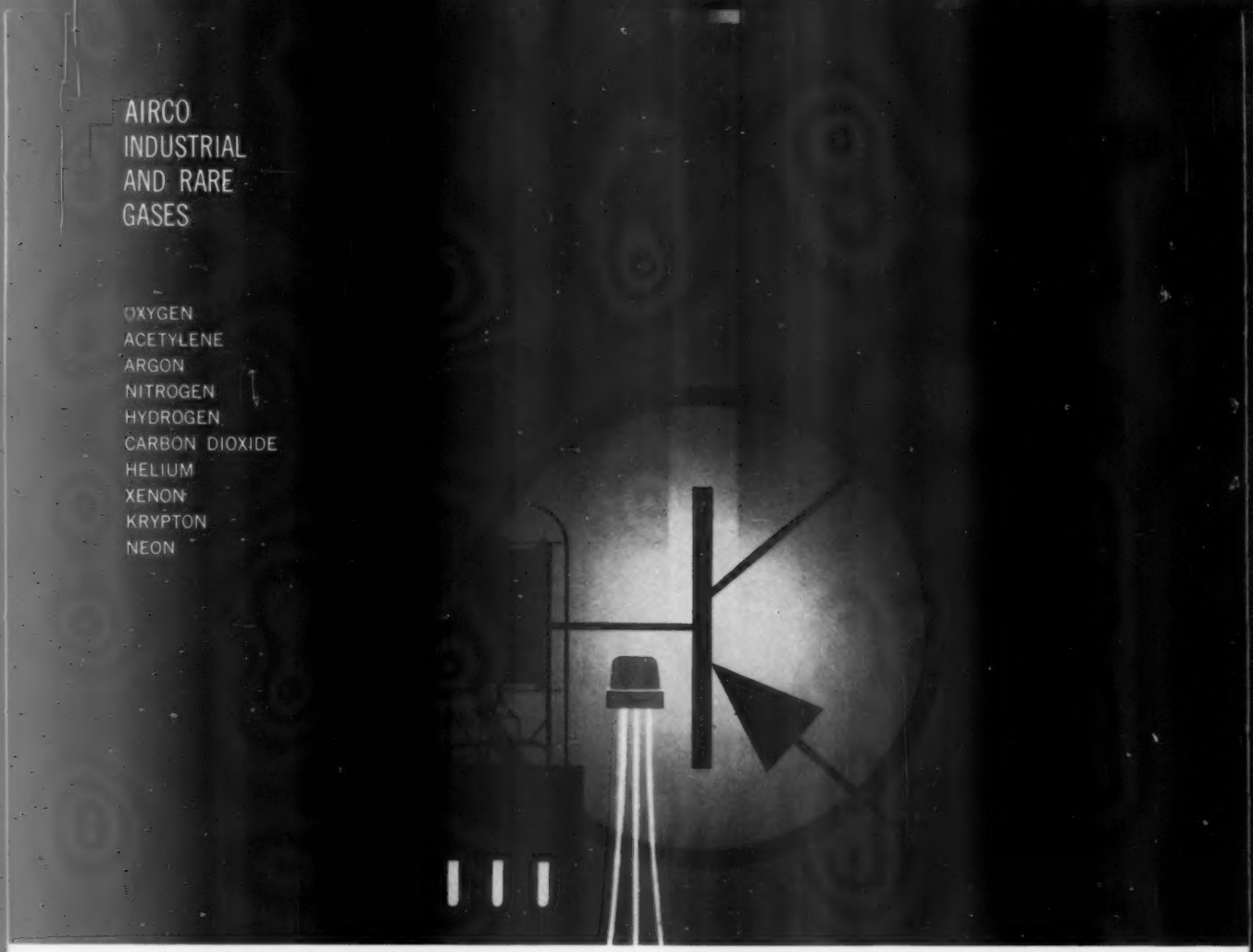

in electronics . . . Air Reduction gases provide the right environment

One of the significant uses of Air Reduction gases is in the creation of special "environments" wherein a delicate production or testing operation may take place. For example, in electronics, germanium and silicon crystals for transistors are "bred" in atmospheres of Air Reduction nitrogen or argon with purities of 99.995%.

The electronics industry also utilizes the refrigerating properties of Air Reduction liquid nitrogen to create *low temperature environments* for production. Electronic tubes are flushed with nitrogen and filled with argon, nitrogen or argon-nitrogen mixtures to create an oxygen-free environment. And oxygen, in turn, is used in photo flash bulbs where a combustion-supporting atmosphere is needed.

Air Reduction produces all of these industrial gases and also hydrogen, xenon, krypton and neon. If you use industrial gases for any purpose, Air Reduction's Technical Service Organization will help you work out economical and efficient applications. There is an Airco office near you.

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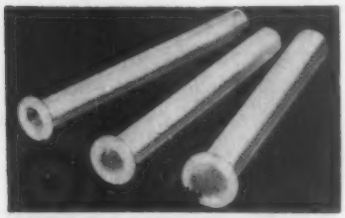
Products

Condenser Tube Protector Eliminates Turbulence



Condenser tube protectors, fabricated from fracture-proof nylon, prevent turbulence. This is accomplished on the protector's inner wall, which gradually tapers toward the discharge end, providing the thinnest possible wall at that point. Thus, the extremely close conformity of the protector end with that of the I.D. of the tube allows smooth water flow. Nylon gives resistance to sand blasting, air impingement, corrosion, fungus, alkalis, and solvents. Protectors available in tube sizes ¾ in. 16 and 18 BWG; ⅞ in. 16 and 18 BWG and 1 in. 18 BWG. Crane Packing Co., 6400 Oakton St., Morton Grove, Ill.

Write No. 28 on Inquiry Card—Page 32

Lubricant Boosts Die Life

The life of the die in the illustrated 65-ton blank and draw press is being extended four times by the small amount of Molysulfide (MoS2) lubricant being applied to the 1010 steel stock. The press forms stock into 2" socket casings for casters. Such occasional applications not only increase die life, but permit deeper draws, hold parts to closer dimensions and produce parts with a smoother finish than is otherwise possible. Climax Molybdenum Co., 500 Fifth Ave., New York 36, New York.

Write No. 29 on Inquiry Card—Page 32

Now—an improved electrocleaner with *chelating action*

New Oakite 190 strips smut faster, cuts plating rejects

This new product of the Oakite Laboratories is a great step forward in reverse current cleaning. By chelating action, it insures faster removal of smut, fingerprints, light rust bloom and, under certain conditions, even light oxides.

It's such a superior cleaner that in some cases a number of pre-cleaning steps have been eliminated entirely . . . and with reduced plating rejects, at that.

Here's what Oakite 190, with chelating action, gives you:

High electrical conductivity
Fast wetting and emulsifying
Controlled foam blanket
Water softening action
High chromic acid tolerance
Long, economical solution life

Ask your local Oakite man about Oakite 190, or write for details to Oakite Products, Inc., 54 Rector Street, New York 6, N. Y.

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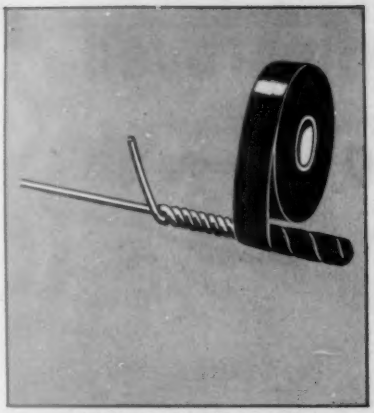

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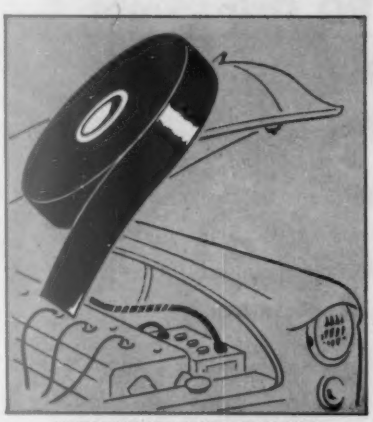
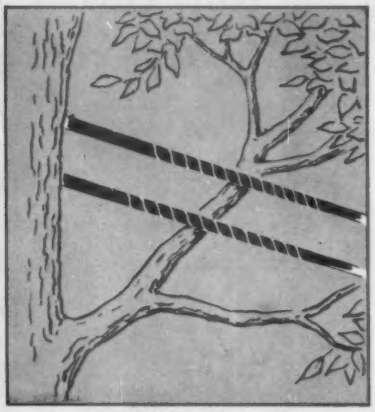


PERMANENT FAST STICKING



ABRASION-RESISTANT

OUTSTANDING ONE-WRAP PRIMARY INSULATION

Porter® QUIK-STIK
POLYETHYLENE ELECTRICAL TAPE

- **IDEAL FOR ALL OUTDOOR AND INDOOR, UNDERGROUND OR OVERHEAD WIRING, IN UTILITIES, ELECTRONICS, AIRCRAFT, AUTOMOTIVE, AND GENERAL USE.**
- Permanent strong tack—sticks anywhere!
- Stays flexible from minus 70° F to plus 200° F.
- Dielectric strength tested to 1,000 volts per mil; uniform power factor over wide frequency range.
- Low moisture-permeability, high corona-resistance.
- Resists acids, alkalies, oils, solvents, fungus, bacteria, gases.

GET FULL INFORMATION on new Porter QUIK-STIK polyethylene tape by writing the *Quaker Rubber Division, H. K. Porter Co., Inc.; Philadelphia 24, Pa., or Pittsburg, Calif.*

H. K. PORTER COMPANY, INC.

QUAKER RUBBER DIVISION

For More Information Write No. 211 on Inquiry Card—Page 32

Products

Tool Increases Capacity Of Surface Grinders

A machine tool will double the capacity of a 6″ x 18″ surface grinder. The motorized Roto-Table will grind the surface of a 12″ diameter plate flat and parallel to a tolerance of .00050 (fifty millionths). Roto-Grind will fit on any surface grinder in either horizontal or vertical position. The vertical position permits I.D. or O.D. grinding on a surface grinder. Roto-Grind can be used in conjunction with jig grinding for grinding large rings or off-set holes. It can be dis-engaged and operated manually. Standard models are 6″ and 11″ diameters. M-M Tool Mfg. Co., 1128 E. Third St., Dayton 2, Ohio.

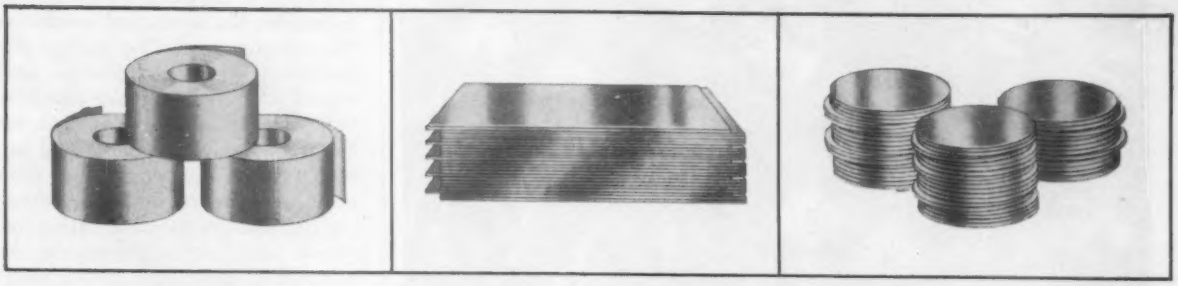
Write No. 30 on Inquiry Card—Page 32

Multiple Control Counting

A new series of counting devices capable of multiple control, counting, and memory functions has been developed by Sterns Control Corporation, Great Neck, N. Y. The new series is applicable to all types of machinery, and to any measurement translatable into digital units. Functional plug-in circuits are used to keep down-time to a minimum. This design feature makes it possible to isolate trouble quickly. At the same time maintenance is reduced to a matter of replacing defective units.

Write No. 31 on Inquiry Card—Page 32

If you use aluminum sheet in any form, specify **Fairmont** to get the maximum



Deep-Drawing Superiority • Versatility • Utility!

Fairmont wrought aluminum sheet not only meets the standards but exceeds them in mechanical qualifications. Excellent drawing quality, superior finishing and non-earing properties (vitally important to the manufacturer but not definitively qualified in the specification standards) are outstanding examples of Fairmont's superiority. Close adherence to required gauge tolerances is vitally important, since aluminum is bought on a poundage basis.

It is important to you, the purchaser, that every alloy Fairmont makes is rolled every working day.

This affords customers less lead time between ordering and shipment—helps keep inventories low, reducing investment in floor space and work in process. It permits fabricators' change orders to be executed rapidly and economically, if necessary.

And Fairmont's personal attention to orders, both large and small, guarantees maximum satisfaction.

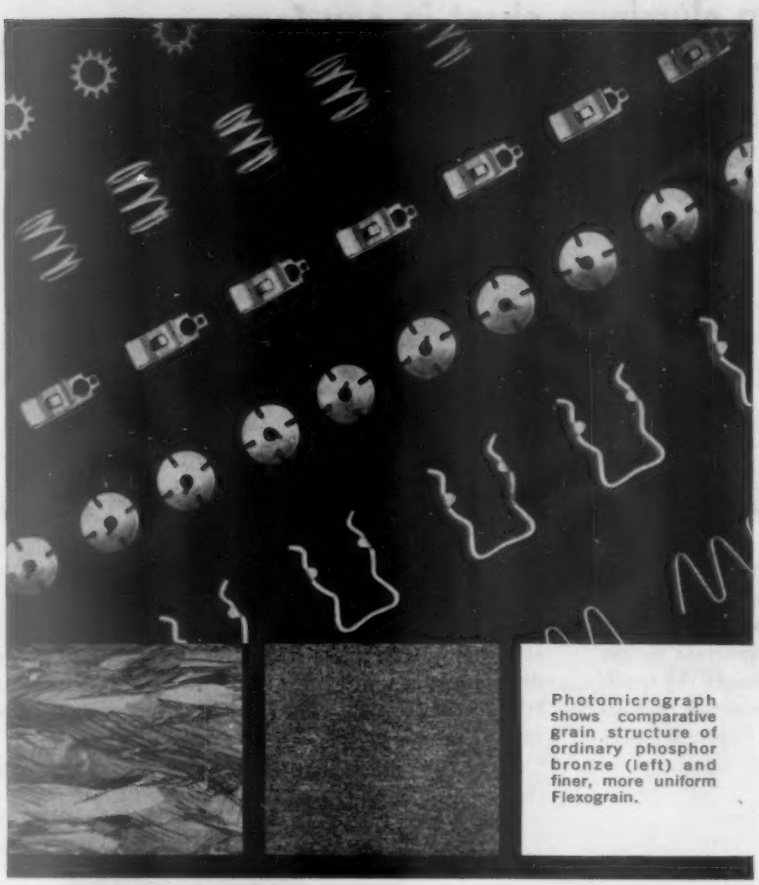
Let us put a copy of Fairmont's latest technical bulletin in your hands. Write or call today.

Sales Offices in Principal Cities

Fairmont Aluminum Company

Subsidiary of Cerro de Pasco Corporation

Dept. U-5 • Fairmont, West Virginia


Photomicrograph shows comparative grain structure of ordinary phosphor bronze (left) and finer, more uniform Flexograin.

TESTS PROVE BETTER FATIGUE LIFE with Flexograin phosphor bronze

Only a specialty mill in phosphor bronze could produce a product like Flexograin—a uniform, fine-grain phosphor bronze with substantially better fatigue life. Tests prove that Flexograin withstands stress and strain that would cause failure in ordinary, coarse-grain phosphor bronze. Even after torturous forming operations, Flexograin, with its higher ductility, maintains its smooth, bright surface finish.

Riverside-Alloy technical experts don't just accommodate phosphor bronze inquiries—they *concentrate* on them. Chances are, they can suggest new uses for Flexograin that will save you money. Wire, write, or call for complete details. And for free technical bulletin, T-4, which describes the properties and uses of Flexograin, write today to—*Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Riverside, N. J.*

H. K. PORTER COMPANY, INC.
RIVERSIDE-ALLOY METAL DIVISION
For More Information Write No. 213 on Inquiry Card—Page 32

How To Measure Purchasing Performance

(*Continued from page 61*)

the help of the budget director, he estimates his personnel needs for the coming year. The budget department then calculates estimated payroll and other administrative costs and submits them for the purchasing manager's and top management's approval. It is then easy to compare actual purchasing department administrative expenses with budgeted expenses on a monthly basis through the year. The administrative budget is particularly helpful in keeping such not-so-insignificant costs as telephone and travel expense in line through the year.

The materials budget is a less useful tool to purchasing than the administrative budget. Typically, the materials budget is an estimate of the total cost of materials for a given projected sales volume. Actual materials costs can then be compared against this projection and deviations from standard analyzed. There are two basic reasons why material costs would vary from standard: usage and price. Usage variances are mostly manufacturing's responsibility. (But not entirely so. If purchasing is buying poor quality materials, there will probably be more waste in manufacturing.)

Price variances are usually considered purchasing's responsibility. However, they are not a good measure of purchasing's ability to meet its cost objectives. For price variances can arise from general market swings that are beyond purchasing's control. They can also arise from design and specification changes which are also beyond purchasing's control. Consequently, price variances must be analyzed and segregated before they can be used as a measure of purchasing performance. Frequently, the easiest way to do this is by use of purchase price indexes. A number of big corporations are now using such indexes to measure purchasing performance. An article is now being prepared for a future issue of PURCHASING which will describe in detail how the Chrysler Corporation uses in-

(*Please turn to page 95*)

Suppliers In The News

P. J. Calabrese has been appointed sales manager of **Grieve-Hendry Co., Inc., Chicago, Ill.** Mr. Calabrese was formerly

P. J. Calabrese

regional sales manager for Cramer Controls Corp. He has had broad experience in industrial market research and the establishment and training of industrial salesmen and sales representatives.

Donald H. Hangen has been named district sales manager in **Cincinnati for General Electric** tubes and other components. From his office at 2621 Victory

Donald H. Hangen

Parkway, Cincinnati, he will cover the areas of Cincinnati, Dayton, Lexington, Ky., and Charlestown, W. Va. Mr. Hangen succeeds Henry B. Nelson, who recently was appointed manager of trade relations and distributor development with headquarters in Owensboro, Ky.

Jervis B. Webb Company, Detroit, Mich. has announced the appointment of William E. Thornley as sales manager for the Bulk

William E. Thornley

Handling Division. Mr. Thornley has been active as a sales executive in the bulk handling industry since 1947.

Thomas N. Parlon has been appointed sales manager for Yale electric lift trucks by **Yale Materials Handling Division, The**

Thomas N. Parlon

Yale & Towne Manufacturing Company, Philadelphia, Pa. The new sales manager replaces Charles E. Howard who has been named manager of attachment sales development for the division. Mr. Parlon has been associated with the Yale industrial lift truck sales department as associate director of field activities. Later he was manager of the New York sales and service branch.

The appointment of Edward A. Goetz as sales manager has been announced by **Gentex Corporation, New York, N. Y.** Mr. Goetz

Edward A. Goetz

was formerly associated with Henrite Products Corp. and the St. Clair Rubber Co. He will concentrate on the expansion and development of the industrial lines of the company. Mr. Goetz will work out of the company's New York Office.

The appointment of John T. Bennett as sales manager has been announced by **Gorham Tool**

John T. Bennett

Company, Detroit, Mich. Since joining Gorham in 1940, Mr. Bennett has served in various capacities—including production, engineering and sales. Before his recent appointment, he was midwestern district manager for the company.

When you buy from U. S. Steel

STEEL + PLUS IN ACTION: RESEARCH

This picture of the inside of an open hearth furnace was taken by a high-speed motion picture camera that takes up to 3000 frames per second. When the pictures are projected at normal viewing speed, one second of action lasts almost four minutes! This permits U. S. Steel researchers to record and study in detail the action taking place inside the furnace. New and intimate knowledge like this helps to improve the quality and production of USS steels.

American Bridge • American Steel & Wire and Cyclone Fence • Columbia-Geneva Steel • Consolidated Western Steel • National Tube • Oil Well Supply Tennessee Coal & Iron • United States Steel Homes • United States Steel Products • United States Steel Supply and Gerrard Steel Strapping Universal Atlas Cement • United States Steel Export Company

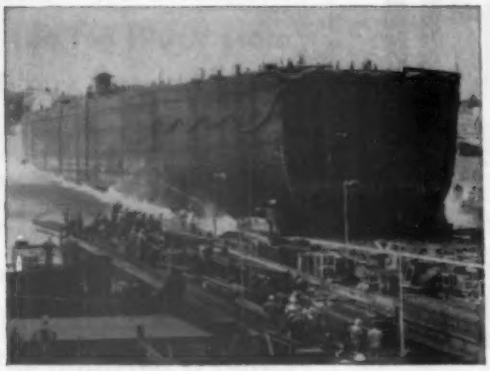
you get STEEL + PLUS

STEEL + PLUS IN ACTION: MARKETING ASSISTANCE

Through U. S. Steel's extensive national television and magazine advertising, millions of the buying public are being presold on the advantages of consumer products made of *steel*, and on the STEELMARK as the symbol which assures them of this. To enable manufacturers and retailers of consumer steel products to get full benefit from the continuing STEELMARK program, STEELMARK tags, labels and merchandising helps are being made available to them without charge.

STEEL + PLUS IN ACTION: TECHNICAL ASSISTANCE

A turbine manufacturer made discs from a special alloy steel that had to be forged, cross-rolled, heat treated, and torch-cut to size . . . *before* machining. Our metallurgists suggested the use of USS "T-1" Steel supplied in circular plates. "T-1" Steel had better mechanical properties and it eliminated the need for forging and cross-rolling. The manufacturer adopted "T-1" Steel and saved 60% in material costs.



STEEL + PLUS IN ACTION: FACILITIES

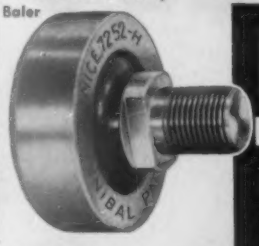
The T-2 Tanker of World War II fame is not big enough to be practical today. So they "jumboize" it—cut the ship apart and insert a new and bigger mid-body section. Thus such tankers, otherwise obsolete, again become economical carriers, saving their owners millions of dollars through the greater capacity and years of service. American Bridge Division of U. S. Steel has the facilities, experience, and personnel to handle a wide range of all-welded steel Marine construction.

USS and "T-1" are registered trademarks

USS **United States Steel**

For More Information Write No. 214 on Inquiry Card—Page 32

No. 7252-H—Plunger Guide Roller for Hay Baler



Revolutionary NEW

NICE BEARINGS

Meet...and Beat Tough Application Problems

*Unibal FEATURES
*Solid Inner and Outer Raceways
*Deep, Continuous, Unbroken Ball Grooves
*Full Complement of Balls

NICE now offers Product Designers the new and different UNIBAL® Ball Bearing. UNIBAL design and manufacturing methods (patent applied for), produce bearings of exceptional durability and strength. They feature solid inner and outer raceways with deep, unbroken ball grooves . . . there are no split races or loading slots, yet there is a full complement of balls. NICE bearing No. 7252-H illustrates the ruggedness of the UNIBAL construction. Your inquiries are invited.

NICE

NICE BALL BEARING CO.
NICETOWN • PHILADELPHIA • PENNSYLVANIA
DIVISION OF CHANNING CORPORATION

For More Information Write No. 215 on Inquiry Card—Page 32

MARSH Mastergauge

The gauge that has everything!

• LEAK-PROOF ONE-PIECE CONSTRUCTION . . . bourdon tube fused to socket and tip by exclusive "Conoweld" process.
• STURDY "MARSHALLOY" CASE . . . formed of boiler-plate-thickness steel, copper clad inside and outside to give it the corrosion resistance of solid copper. It's one third lighter, but four times stronger than cast iron.
• PRECISION "MASTERGAUGE" MOVEMENT . . . with such exclusive features as the coined sector gear.
• AVAILABLE WITH STAINLESS TUBE AND SOCKET . . . choice of stainless steels and alloys for all corrosive conditions.
• WITH "RECALIBRATOR" . . . quickest and best way to keep a gauge accurate.

These features are combined only in "Mastergauge", standard bearer for the broad line of Marsh Gauges . . . each the best of its kind. Ask for data.

MARSH "THE STANDARD OF ACCURACY"

MARSH INSTRUMENT CO., Sales Affiliate of Jas. P. Marsh Corp., Dept. G, Skokie, Ill.
Marsh Instrument and Valve Co. (Canada) Ltd. 8407 103rd St., Edmonton, Alberta.
Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas.

For More Information Write No. 217 on Inquiry Card—Page 32

we design and manufacture wire cloth and perforated metal

INDUSTRIAL Strainers

Send your inquiries to:

WAYNE WIRE CLOTH PRODUCTS, INC.
Kalkaska, Michigan

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A personal copy would always be handy for easy reference—ready with help when you need it.

Order a personal subscription now—$4. a year. Write to PURCHASING Magazine, 205 E. 42nd Street, New York 17, N. Y.

How To Measure Purchasing Performance

(*Continued from page 90*)

dexes and other evaluation techniques to measure purchasing performance.

Cost Reduction Reports. Hundreds of purchasing departments make a practice of regularly reporting all cost reductions. Such reports serve two purposes: First, they give recognition to the buyer responsible for effecting the cost reduction and stimulate interest in cutting costs. Second, by tabulating cost reduction reports it is possible to use them as a barometer of purchasing performance. A sample cost reduction report is illustrated in this article.

Quality and Delivery Performance. Ten years ago, less than a half dozen companies attempted to measure quality and delivery performance quantitatively. Now at least a hundred purchasing departments routinely conduct such measurements. One reason why such measurements are more popular is that they are now easier to make since the use of computers and punched card equipment has grown more common.

With punched card equipment, measurement of quality performance becomes routine. All deviations from quality standards are classified. Data from inspection reports is then key punched. The end product is a report by the vendor that indicates various classes of rejections major and minor) as a precent of total shipments from a given supplier.

Reports on delivery performance can be made in similar fashion. The actual date that a shipment is received can be compared with the promised date. The difference between the two would represent the "delinquent days" for that particular shipment. Total "deliquent days" can then be divided by total shipments to determine a "delinquency percentage." This percentage can, of course, readily be computed either by vendor or by buyer.

Internal Audits. The typical purchasing department spends more than half of its company's sales dollar. That is basically why

(*Please turn to page 96*)

What's new in plastics? Visit the show and keep abreast of this ever-changing industry. See all that's latest and best . . . new plastics you can use in your products. New equipment to speed production . . . find out how to make bigger profits through use of plastics. Write for free tickets now . . . use your company letterhead, please—the general public won't be admitted.

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250 Park Avenue, New York 17, N. Y.

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RATES

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Displayed .....$8.50 inch

1—DC Steam Driven Generator, 35 KW, 240 Volt Ridgway Steam Engine 67 HP.
1—DC Steam Driven Generator, 150 KW, 240 Volt Fleming Harrisburg Steam Engine, 200 HP.

Athenia Steel Division
National-Standard Company
Clifton, N.J.

WE'RE LOOKING TO BUY!!!

• **INVENTORIES** •
OF DISCONTINUED OR OFF SEASON LINES
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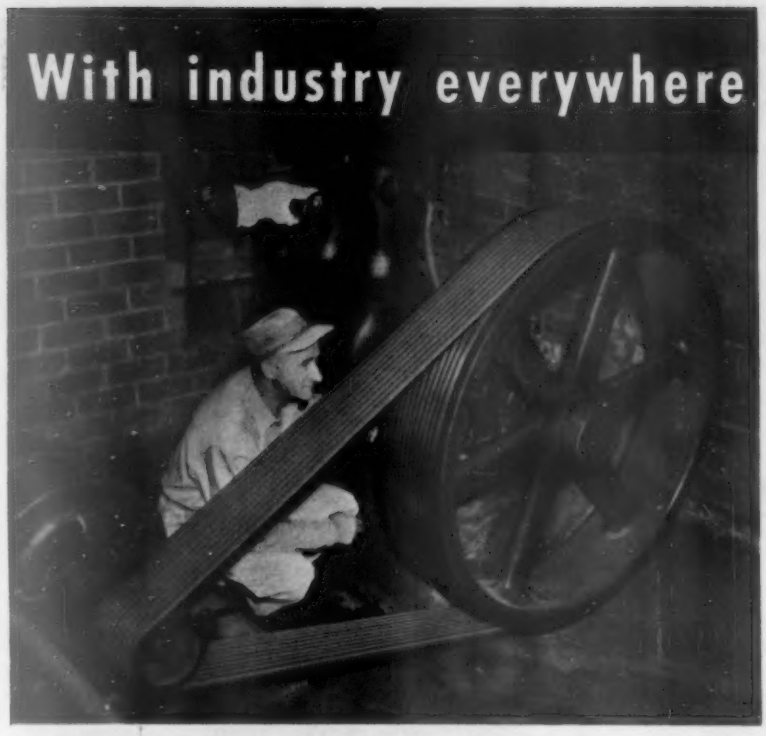
PRODUCTION & SPECIAL BUILT
• **RAW MATERIALS — EQUIPMENT — PACKAGING SUPPLIES** •
USED IN ALL INDUSTRIES

NOTE: — Our buying range is so varied that is is impossible to describe the many items we buy — we will make you a worth while offer for ANYTHING you have for sale.

NATIONAL TRADING CO., 202 CAMDEN ST., NEWARK 3, N. J.



the No. 1 choice is the V-belt with concave sides

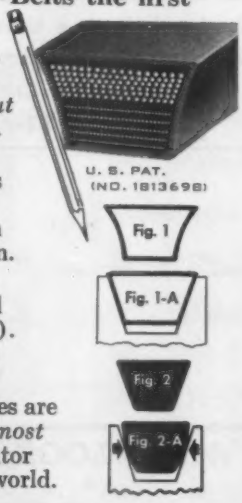
It is easy to see why concave sides insure far longer belt life... and make Gates V-Belts the first choice of industry everywhere.

Just *make this simple test:* bend a Gates V-Belt as if it were going around a sheave. Feel how the concave sides (Fig. 1) *fill out* ... become perfectly straight (Fig. 1-A).

Note how this belt thus makes full contact with the sides of a sheave ... grips the sheave evenly, distributing wear uniformly across the sides of the belt. Uniform wear lengthens belt life — keeps costs down.

With a straight-sided belt (Fig. 2) the sides *bulge out* when the belt is bent, and wear is concentrated on the bulge (Fig. 2-A). Uneven wear shortens belt life — increases belt costs.

Because Gates V-Belts with concave sides are so universally preferred, they are also the *most widely available.* There are Gates Distributor stocks in industrial centers throughout the world.



The Gates Rubber Company, Denver, Colorado

Gates *World's Largest Maker of V-Belts* TPA 351

Gates VULCO ROPE Drives

For More Information Write No. 219 on Inquiry Card—Page 32

How To Measure Purchasing Performance

(Continued from page 95)

good records are an essential purchasing objective; without them there is always the possibility that someone will always suspect that these enormous sums are being spent by purchasing in an improper manner. Purchasing is one of the key custodians of a company's funds; its records should permit every transaction to be accounted for. Many purchasing departments take advantage of the services of the internal audit departments in their companies to assure that records are adequate and controls sound. Skilled internal auditors can compare actual records with procedures and policies in the purchasing manual. Discrepancies are noted and reported to the top purchasing official for appropriate action. The auditors are also often able to make suggestions for improved controls and procedures. Further details on the subject are available by reading the booklet, *Internal Audit and Control of a Purchasing Department,* which can be purchased for $1.00 from The Institute of Internal Auditors, 120 Wall St., New York 5, N. Y.

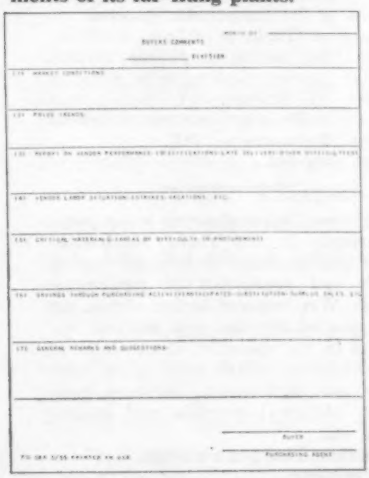
Reports to Management. Almost every purchasing department makes some sort of routine report to management. It may be a simple one that just indicates department activity—number of requisitions processed, purchase orders issued, etc.—or it may be quite complex and attempt to appraise management of all department activities and plans. All such reports provide a basis for objective appraisal of purchasing activities.

They are particularly useful in departments that develop a formal program indicating precisely how they expect to achieve their objectives during the year. In the "plan" the purchasing manager might set bogeys for cost reduction, inventory turnover, quality, training programs, etc. He can then regularly report his progress in meeting his self-imposed quotas. In his report, he would naturally include as much objective data as possible—inventory

turnover rates, cost reduction summaries, etc.

The purchasing executive that is able to develop first-class report of this type is probably doing a reasonably good job of measuring purchasing performance. For when he makes his report he is completing the last of the four basic steps—comparing progress on his purchasing program with objectives—presented at the beginning of this article. He will be giving management a maximum of information to use in evaluating its purchasing department. And management won't have to rely on meaningless cost-per-order data from accountants who are capable of evaluating purchasing only as a clerical function. For more on exploding the cost-per-order myth, see the special article on the subject, elsewhere in this issue of PURCHASING.

The Carborundum Co. uses these forms to report activities and performance of the purchasing departments of its far-flung plants.



For More Information Write No. 220 on Inquiry Card—Page 32→

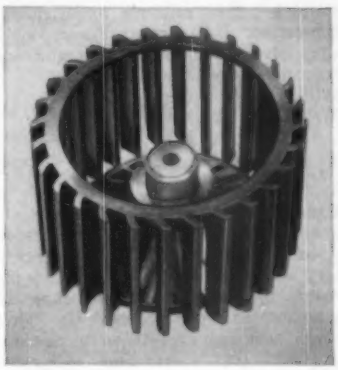
profiles in plastics

By **BARTO L. ATTIG,** *Sales Manager*
AMERICAN INSULATOR CORPORATION
One of The Men Behind The Man From AICO

Most of the men from AICO, the Sales Engineers who serve Aico customers, are recruited from the ranks of skilled technicians within our own organization. Because of their firsthand experience and work in Engineering, Die Making and actual molding of plastics, Aico Representatives are singularly qualified to provide you with the most economical solution to your molded plastics problems. Next time you seek fast, low-cost production of custom molded plastics . . . regardless of molding material, molding method required or quantities involved . . . Talk to A Man From AICO. Aico's unexcelled service, plus coordinated facilities for molding all types of plastics under one roof, saves you time, saves you money . . . eliminates split responsibilities.

AICO MOLDED PLASTICS REPLACE METAL BLOWER WHEELS IN AIR CONDITIONERS

AICO Molded blower wheels now provide manufacturers of air conditioners and heating units with several important production and operating advantages. Blade sections are aerodynamically designed . . . an achievement economically impossible in fabricated metals. Because they're molded to exacting tolerances, precision accuracy is achieved without costly machining and finishing . . . production cost is lowered, assembly time reduced. One-piece construction results in silent operation, higher air delivery efficiency than possible with metal . . . plus dimensional stability in a wide range of temperatures.



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LETTERING

Lettering to be molded on part should be on surfaces parallel to the parting line, sides of characters should be well tapered. Character depth of 1/64-inch is considered adequate . . . depth of 3/64-inch is maximum recommended. Confine lettering to flat surfaces, lettering on curved surfaces requires a split die or complicated die making. Additional information on lettering is fully covered in Aico's Plastics Designer's Handbook. Coupon will bring your FREE COPY.

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New Freedom, Pa.
Please send me a FREE copy of Aico's PLASTICS DESIGNER'S HANDBOOK.

Name _____

Title _____

Company _____

Address _____

Employment Service

Experience: Asst. P.A. with multi-divisional manufacturing corporation seeks opportunity to fully utilize leadership ability with high degree of efficiency, initiative, and imagination. Resourcefulness, tact, and ability to make sound recommendations and decisions have highlighted eighteen years of industrial experience predominantly in purchasing.
Education: One year at university has been supplemented with extensive night school and university extension courses in related subjects.
Will relocate.
Write: Box 220.

Experience: Recently Two years as a civilian U.S. Air Force contracting and purchasing officer and 2 years before, as an army major, as purchasing and contracting officer. Four years up to date military procurement, at a supervisory level. Twenty-one years automotive production and material control, requisition and purchasing background before military experiences.
Education: U.S. Armed Forces Institute; government purchasing and contracting course completed.
Will relocate.
Write: Box 224.

Experience: Purchasing agent past nine years for paint manufacturer. Responsible for $2 million volume and inventory control of raw materials. Buy pigments, synthetic resins, varnishes, oils, solvents, and paint chemicals. Three years previous experience in accounting and cost accounting with same firm. Three years Government procurement for Selective Service System.
Education: B.S. in Commerce—Major Marketing. Minor Economics.
Will relocate.
Write. Box 225.

Experience: Seven years chief storekeeper and assistant purchasing agent of oil refinery. 5 years as purchasing agent of oil refinery. 1½ years as general manager of small industrial supply company. 3 years as industrial supply salesman.
Education: General Business Administration; Correspondence Courses in Electronics and Photography.
Will relocate.
Write: Box 228.

Experience: Thirty-two-and-a-half years railroad purchasing. Thoroughly grounded all phases purchasing procedure: evaluating bids; placing orders; contract negotiating; expediting; supervisory work; ability to meet public.
Education: Business School; various courses in creative writing.
Write: Box 229.

Experience: Varied technical and administrative training affords unusual background in plant engineering, tool engineering, cost accounting, and purchasing. Two years professional services company. Four years heavy manufacturing industries. Private pilot.
Education: B.A. degree in Commerce-Economics. Two years engineering courses.
Will relocate.
Write: Box 230.

Experience: Twelve years diversified purchasing experience in drugs, medical and surgical supplies. Procurement and inventory control for U.S.N. Presently responsible for volume plant purch. of several hundred raw material items and finished goods relating to mfg. also all mach. shop, maintenance, capital, office and lab. supplies and equip. Handle own perpetual inventory.
Education: B.S. in Business Administration.
Will relocate.
Write: Box 231.

Experience: Comprehensive 14 years top companies, purchasing administration and buying wide category of materials in heavy volume, streamlining procedures, standardization. Three years sales - production. Process industry, chemical/allied, and general manufacturing both industrial and consumer products.
Education: B.S. business administration.
Will relocate.
Write: Box 232.

Experience: Twenty-eight years diversified experience as purchasing agent, assistant purchasing agent & buyer in aircraft, marine, electronic components & parts, transportation & oil industries; excellent contacts to effect savings by careful study of available sources of supply.
Education: Course in Mechanical Drafting. Attended College for 2 years, course in Business Administration.
Will relocate.
Write: Box 240.

Experience: Six years assisting in procurement of automotive and industrial items; seven years full responsibility for same firm. Last six years for another concern as purchasing agent, handling two manufacturing plants plus resale items in building industry. Organized and set up system for entire ordering procedure. Experience in accounting.
Education: Two years Business College. Special purchasing courses.
Will relocate.
Write: Box 241.

Experience: Twenty-six years in federal government at Washington in high level positions as specialist on contracting, contract and price negotiations, contract administration, contracting officer, and supervisor of procurement and audits of Government fixed price and CPFF contracts, familiar with ASPR and related military directives. Small Business regulations, and decisions of the comptroller general.
Education: Graduate of Law—LLB degree. Also accountancy and various special courses dealing with subjects related to procurement, negotiations and the audit of government contracts. Prefer Washingtgon, D.C.
Write: Box 242.

Experience: Approximately seven years experience in Air Force purchasing. Have held positions both as purchasing agent and supervisor of purchasing agents. Was responsible for purchasing all types of supplies and services required in the operation of an air force installation of which were office supplies and equipment, harware type items, electrical supplies and equipment, etc.
Education: Two years college.
Will relocate.
Write: Box 243.

Listings in this department are offered without charge. Both purchasing department personnel interested in changing jobs and employers in search of replacements or additions to their departments may take advantage of this service. When writing, specify whether you want the applicant's form or the employer's form. Address all correspondence to Employment Service Department, PURCHASING Magazine, 205 East 42nd Street, New York 17, New York.

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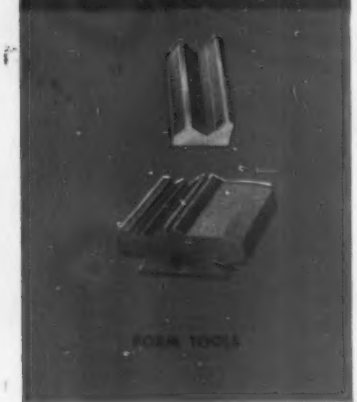

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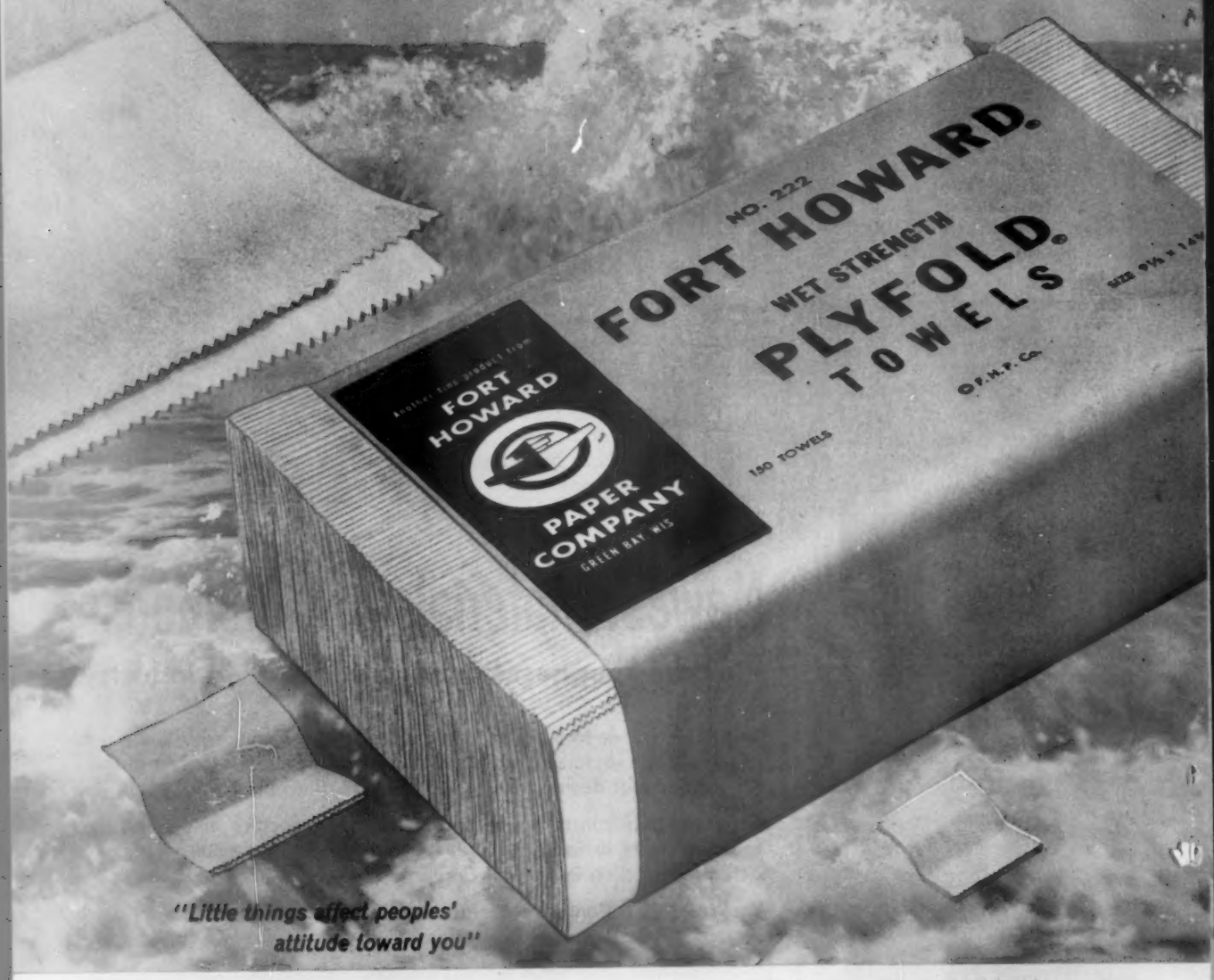

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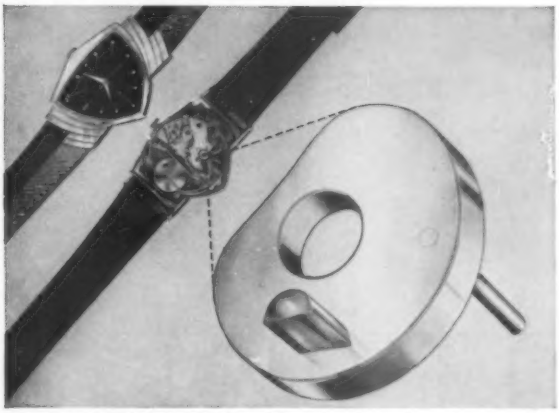
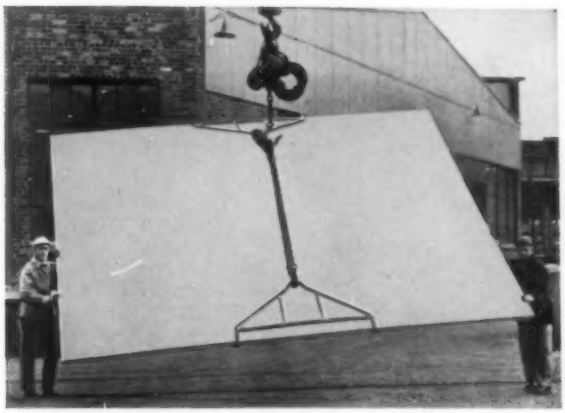
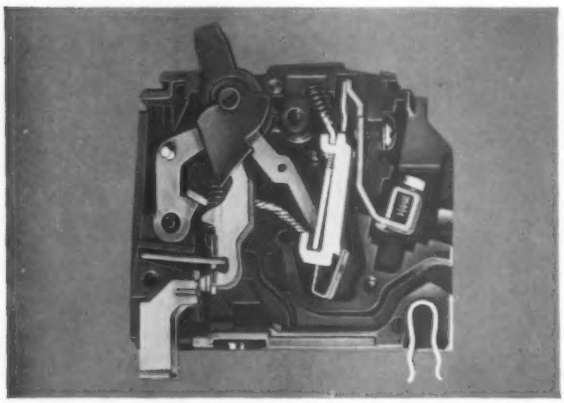


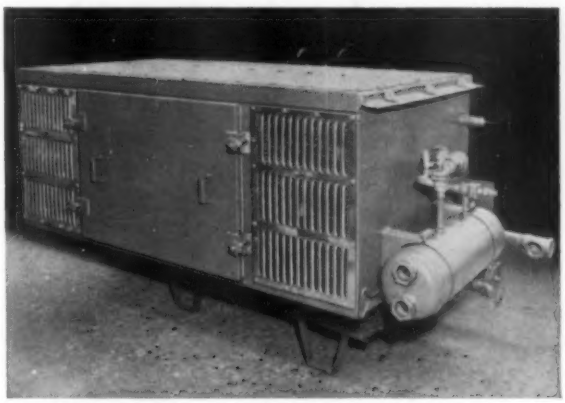
HAMILTON WATCH CO., for the world's first electric wristwatch, demanded these qualities in metal for a vital 1/7000-ounce indexing roller – high hardness and tensile strength; ease of blanking, machining; nonmagnetic properties. Anaconda Ambraloy-901 met the need perfectly. The magnified pinhead-size assembly shown above has a half-round sapphire jewel. The pin limits balance motion.



ALLIS-CHALMERS – building what may be the world's largest surface condenser for Commonwealth Edison Co. – needed tube sheets which combined strength and corrosion resistance with machinability. The answer was Anaconda leaded Muntz metal – 4 plates, each 13′ x 17′, 1½" thick, weighing over 7 tons. When drilled, plates support 21,960 tubes, for 200,000 square feet of condensing area.



SQUARE D COMPANY needed low electrical resistance, high spring properties, fatigue resistance in critical parts (in color above) of their QO circuit breaker. Electrical resistance of ordinary phosphor bronzes was too high. So was the cost. Engineers of The American Brass Company suggested Anaconda Ambronze-474 and Square D found it had the right combination of properties for the need. And this metal provided superior forming and lower material costs.



THE TRANE COMPANY'S railroad air-conditioning "dry-wet" combination condensers are mounted under cars – facing severe corrosive conditions and a beating from roadbed gravel and stone. Exposed metal, including casing, liquid receiver, 170-gal. water tank, must have superior corrosion resistance, high strength and toughness. Trane has found Everdur®, Anaconda's group of copper silicon alloys, meets its needs. And Everdur is easy to fabricate.

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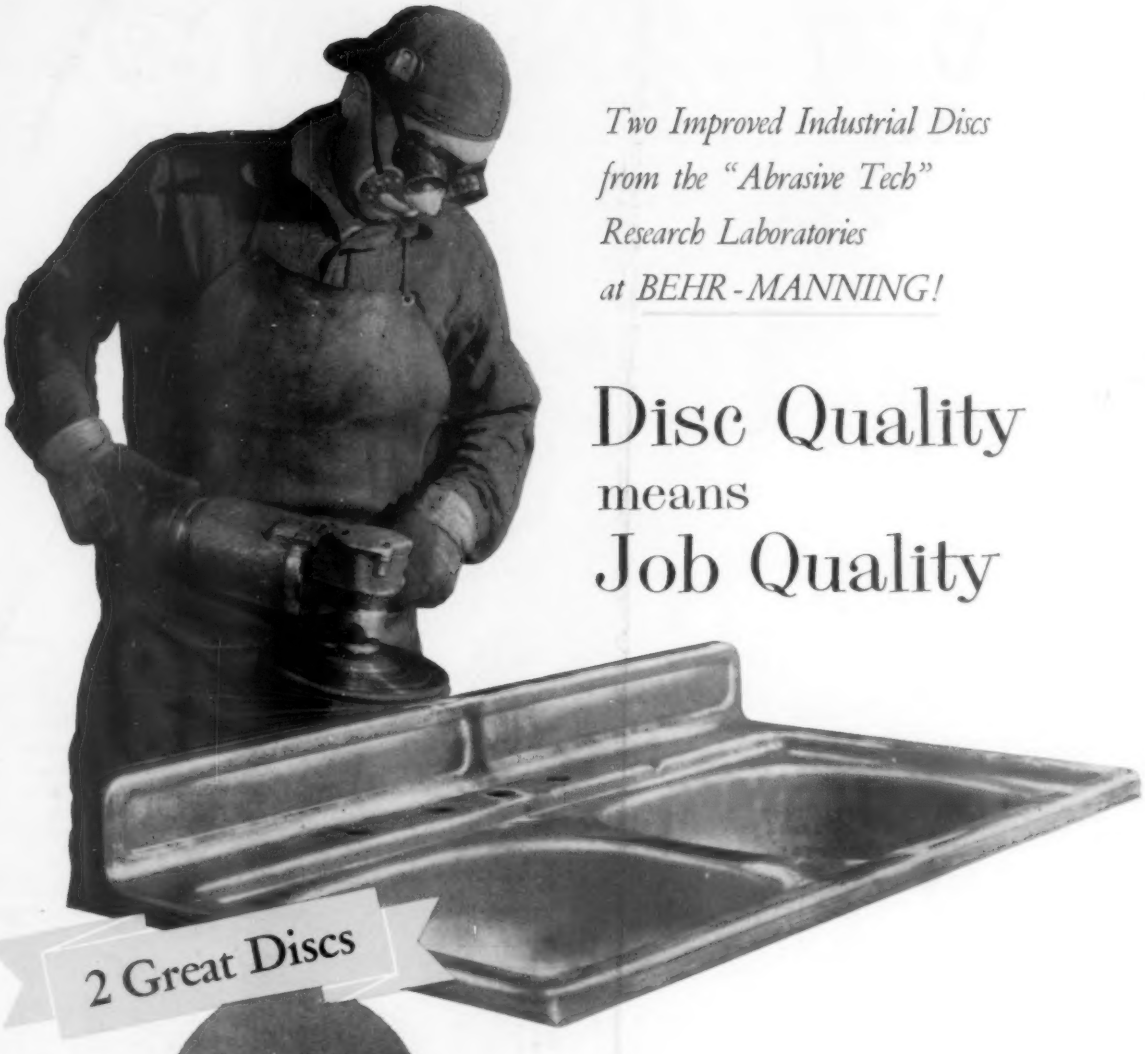

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